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VOLUME VIII 1928 PART IV

INSTINCT, INTELLIGENCE AND APPETITE.

BY A. CAMPBELL GARNETT.

(*From the Psychological Department of King's College, London.*)

I. *Instinctive behaviour as always characterized by intelligence* (p. 249).
II. *The function of relations in instinct process: the theory of 'configurations' or* Gestalt (p. 252).
III. *The distinction of appetitive from non-appetitive instinct processes* (p. 259).
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I. INSTINCTIVE BEHAVIOUR AS ALWAYS CHARACTERIZED BY INTELLIGENCE.

IT has been customary with perhaps the majority of psychologists and philosophers to draw a distinction between instinctive and intelligent behaviour. It is the principal purpose of this paper to attempt to show that this distinction is wrong and to point out what appears to be the true relation between instinct and intelligence. The distinction goes back, in modern psychology, to the time when human actions were believed to be all guided by reason in the light of prospective pleasure and pain, and, perhaps, of the 'moral sense,' while the behaviour of animals was directed automatically by instincts which chance or the Creator had given them. This view of animal instinct as being perfect, rigid, unintelligent and automatic has, however, been as widely shaken by modern investigation as has the complementary belief in man's sublime rationality. We are forced to make distinctions even among those animal activities which seem to be innately conditioned and to recognize the existence of similar innate tendencies to action in man. Some of these innately conditioned actions are mere responses of a part of the organism to some specific stimulus and are probably as rigidly conditioned and unintelligent as all animal instinct was once thought to be. Others are responses of the whole organism to a specific stimulus and perhaps some of these (tropisms) may be completely unintelligent, that is, involve no cognitive processes. But we do not have to rise very high in the scale of animal life before we come to creatures whose responses to certain aspects of their environment, while undoubtedly innately conditioned, show indubitable marks of intelligence; *i.e. cogni-*

tion plays a part both in the reception of the stimulus and in the subsequent process of response. I propose to limit the term 'instinct' to these cases and to define instinctive behaviour briefly as "an innately determined response to the cognition of a meaningful situation." This working definition will hold good even though there are many borderline cases where we cannot decide as to the presence of cognition and even though we do not know what cognition is. The definition would still be valid even if cognition were nothing more than complex molecular change in the cerebrum, as the Behaviourists say it is; though the theory which I shall proceed to present as to the functioning of cognition in instinctive behaviour is, I think, not consistent with such a view.

If cognition plays a part in all instinctive behaviour this means that the older distinction between instinct and intelligence was wrongly drawn. Instinctive behaviour is always more or less intelligent. Certainly, in a creature of low intelligence, any type of instinctive activity (*a*) is greatly limited in the kind of stimulus that can evoke it, and (*b*) is similarly limited as to the kinds of behaviour with which the creature can respond. But cognition is always present in some degree in every response or activity to which the term 'instinctive' can rightly be applied. When such behaviour becomes very intelligent and sophisticated, we are, however, apt to lose sight of the fact that it is instinctive. But the man who writes a story to earn money to buy food is not, strictly speaking, acting less instinctively than the ox that crops the grass; he is acting more intelligently; that is all. It is not the details of the response that are fixed by the innate factor we have called instinct, but rather, as we shall see, the general nature of the end towards which the response shall move; the details are fixed by the limitations of the creature's intelligence and the structure of its sensory-motor mechanism.

But since both the stimulus and the mode of response in instinctive activity are so greatly varied and modifiable as is suggested by this comparison between man and ox, how, it may be asked, are we to say of any such piece of behaviour that it is a manifestation of such and such an instinct? How distinguish instincts from each other? With this problem I have dealt on a previous occasion[1]. May it suffice to say here that I think the most important, indeed the one really satisfactory criterion, is that of the nature of the end-experience in which the conation finally ceases, and satisfaction is found. Early attempts to distinguish the instincts by reference to stimulus and response have led only to confusion in the creation of a multiplicity of alleged instincts, while McDougall's suggestion[1], that the emotion marking the instinctive process may be taken as criterion of the instinct to which it belongs, is of value only with regard to a certain limited number of instincts. With some of the most important instincts its quality is too vague for a distinguishing mark. There is only one uniform characteristic of every distinct type of instinct process which is different for every such different type. That is the end-experience in which the creature finally finds satisfaction. This end can be known in introspection and safely inferred in observation of animals. By reference to it we can distinguish the kind of instinctive drive in operation even in species very different from ourselves and in our own species even when the actual activity is of a highly sophisticated nature.

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[1] *British Journal of Psychology*, Jan. 1928.

This end-experience, like the stimulus, comprises the cognition of a meaningful situation. I use the term 'meaning' here in the sense of 'overknowledge,' that which is known, in a percept or concept, over and above the actual lived experiences which are known. In this sense the 'meaningful situation' includes that which is known (1) of the relations subsisting between the objects cognized, (2) of correlates and other associations to those objects, (3) of relations between these, (4) of the relation between the knower and the object known. In man this 'meaning' may be very full; in the animals it is probably always very scanty.

An instinct process, then, begins with the cognition of one meaningful situation and ends with the cognition of another. Viewed introspectively it contains three phases: (*a*) the stimulus, which consists in the meaningful situation cognized; (*b*) the resulting active or transitional phase, which is experienced as one of a certain mental tension, or excitement, during which attention is held by certain objects, or a certain succession of objects, which the individual is impelled to deal with in a certain way more or less clearly seen to promise satisfaction; (*c*) the end-experience of satisfaction, relaxing of tension and cessation of conation. Observation of instinctive activity in animals gives evidence of the presence of the same three mental phenomena of cognition, attentive striving, and satisfaction and relaxation. There is reason therefore to believe that the introspective evidence gives us the true view of an instinct process, though allowance must be made for vast differences in the level of intelligence displayed by different species as affecting in particular the amount of foresight which enters into the process and the experience[2].

---

[1] W. McDougall, *An Introduction to Social Psychology.*

[2] F. Aveling, article in the *British Journal of Psychology*, April 1926.

II. THE FUNCTION OF RELATIONS IN INSTINCT PROCESS: THE THEORY OF 'CONFIGURATIONS' OR *GESTALT*.

In considering the function of intelligence, *i.e.* of cognitive processes, in instinctive action, it is of the first importance to remember that the stimulus is never merely a sensation or congeries of sensations but always a relatively complex *situation*. A species of spider which has an instinctive tendency to flee from a bee has been shown, says Koffka[1], not to be stimulated to this reaction by any particular colour, odour, or size, but yet to take to flight when the real bee is presented even in the most unusual positions. Now a bee from certain viewpoints presents a very different visual stimulus from that in others. The effective stimulus to the spider then would appear to be certain sensory stimuli *in a certain system of relations*. Birds that are accustomed to the sight of human beings and have occasionally been shot at will often not take to flight at sight of a man with a stick beneath a tree, but will do so immediately if he should point the stick at them. Similarly birds in a game reserve will allow human beings to approach very close, but the same birds, when they are found outside the reserve, will not allow a man to approach anywhere near gunshot range. These latter are examples of acquired instinct stimuli but are none the less important for that. They show decisively that the *relations* which enter into the perception of the object are of crucial importance to its effect on the creature. An alteration in those relations is an alteration in the *meaning* of the situation.

This does not mean, of course, that these creatures educe the relations existing between the lived experiences which initiate the instinct process. Perhaps only human intelligence is capable of actually educing relations, which involves attending to relations as such. What these facts do seem to imply, however, is that what the animal cognizes is a system of related experiences, and that it is the fact of the relations subsisting between the elements of experience, rather than that of the visual, auditory or olfactory qualities which characterize them, that constitutes the cognition of them the beginning of an instinct process. The lived experiences as cognized form a certain 'configuration,' or, as the Germans say, a *Gestalt*, and it is this that constitutes them an instinct stimulus.

This very fruitful conception of 'configurations' has been submitted to searching criticism by a number of writers. In opposition to the *Gestalt* School, Rignano, in some recent articles[2], maintains, I think rightly, what he calls "the qualitative autonomy of the sensorial elements," and contends that it is the affective reaction of the individual to these sensorial elements that gives them their unity and distinctness as separate 'things' in cognition and brings about the appropriate correlated behaviour. But the notion of 'configuration' is too valuable to be easily dispensed with, for such facts as those referred to above in reference to spiders and birds show clearly that the relations of the various sensorial elements to each other do play a part of tremendous importance in even these very simple acts of cognition. Yet the meaning of a situation cannot consist merely of the cognized *spatio-temporal* relations subsisting between the sensorial elements. A barking dog and a silent man with a gun have very similar meanings for a rabbit, yet one cannot possibly see how those two sets of sensorial elements could possibly be fitted into the same set of spatio-temporal relationships. Neither can the meaning be more easily explained as due to affective reactions to the qualitatively autonomous sensorial elements, for the sensorial elements are so vastly different that the number and selectiveness of the paths of association would have to be incredibly enormous if the cognition were effected in this way. For it must be remembered that, on Rignano's view, it is the affective reaction to the sensory stimuli that serves to separate and unite those sensorial elements into meaningful things. So the affect must be aroused before the thing is cognized as such; *i.e.* the appropriate affect must be aroused by the mere mass of stimuli. But these stimuli may be so enormously varied, and such very similar sensory stimuli may produce such very different results when cognized in slightly different relations, that the hypothesis would require an incredible multiplicity and selectiveness of the association paths. It is the great merit of the *Gestalt* psychology to have shown that the relations which enter into the cognition act as an intermediary. Certain sensory stimuli, having certain relations to each other, tend to be *cognized in those relations*, *i.e.* to stand out in consciousness as a *related system*, a 'thing.' It is these *cognized systems of relations* that, on the *Gestalt* view, are correlated with behaviour, and this reduces the number of association paths required to a quite reasonable number. But there still remain the problems (*a*) of finding a place in the *Gestalt* theory for the apparent effect of the affective-cognitive factor in the determination of meaning; (*b*) of discovering some element of similarity in the *Gestalt* arising from two very different sets of stimuli which nevertheless stimulate the same instinct.

---

[1] Koffka, *The Growth of the Mind*.

[2] *Scientia*, Sept., Oct., Nov. 1927.

I would suggest that these two difficulties in the *Gestalt* theory may be satisfactorily overcome if we (1) recognize, as Rignano has suggested, the qualitative autonomy of sensorial elements, and (2) enrich the notion of a 'configuration' to include *all* relations within the range of the creature's intelligence, and particularly the subject-object relation. It has been shown by Köhler, for example, that the meaning of, and the consequent instinctive response to, two greys of different luminosity presented to a hen is determined more by the nature of the *difference* between the two stimuli than by the actual quality of the stimulus. Here then a *relation of difference* enters into the 'configuration' and, though the quality of the sensory elements is not the fact predominantly attended to, those sensory elements, as observed, must possess qualitative autonomy or this relation could not be cognized.

But even when we have admitted that all kinds of relations existing between the sensorial elements may enter into the objective configuration, we are still faced with the problem of how such diverse objective configurations can still have such essentially similar elements of meaning. This can only be met by recognizing the various ways in which a subject can be related to its object as entering into the total configuration or total meaning possessed by the sensorial elements. This relation can be affective and conative in various ways as well as cognitive. This links up the *Gestalt* theory with the facts on which Rignano's contentions are based. We may postulate: (1) that, owing to innate or acquired structure, certain complexes of sensory elements are cognized in certain 'configurations,' *i.e.* with certain of the objective relations subsisting between them forming part of the total fact cognized; this gives us the cognition of 'things'; (2) that certain of these 'things,' again owing to innate or acquired structure, when cognized, tend to determine in certain ways the affective and conative nature of the subject-object relation which forms part of the total configuration, thus enriching in a vitally important way the total meaning of the situation. It is these latter elements of the totality of relations in the 'configuration' that must needs be the same in every meaningful situation in order to constitute it the stimulus of a particular instinct. But these latter elements are determined, on this theory, by that other part of the system of relations which transforms the mass of sensorial elements into a 'thing'—and a thing of a certain kind in certain spatio-temporal relations with other things. The determination of sensorial elements into a 'configuration' or 'thing' and the determination of the nature of the relation of the subject to the 'thing,' or object, may be attributed to facts of structure without placing anything like so great a weight on the association hypothesis as is done if we neglect the help of the theory of 'configuration' or *Gestalt*.

Now relations tend to act as determinants for the evoking of further relations and of related configurations[1]. I would suggest, therefore, that the secret of the relation between cognition of the stimulus and appropriate response is that certain configurations tend to enrich themselves by the evoking of further relations, and particularly by the compilation of the subject-object relation, and then tend to evoke other configurations in which expectation of a certain action is a prominent constituent. And expectation of an action normally leads to its performance[2]. This expectation of action will, in the higher animals, be fairly clear as to the kind of action immediately expected, though very short sighted; *e.g.* a bird, nest building, probably goes to a stick with the expectation of picking it up, but not with the expectation of building a nest. In lower creatures the expectation may perhaps be no more than an "apprehension of the situation as alterable[3]." But in these lower creatures the number of *possible* reactions is very limited; also the sense stimuli are closely correlated with certain reflexes and the working of these reflexes alters the 'configuration' and thus the direction of attention so that (*a*) *expectation of action*, (*b*) *direction of attention*, and (*c*) *sensory-motor limitations* combine to determine the resultant action with a completeness which makes it appear almost mechanical.

To anticipate a likely objection it may be well to point out that a relation which forms part of a configuration, but which is not educed as such, may yet function, not only in the formation of that configuration but also in calling up a correlate or association. In the 'controlled association' test, for example, the idea of the given relation sinks at length below the threshold of consciousness, but still continues to operate quite effectively in controlling the associations. Similarly, in recall, the association is often made *per medium* of a relation which itself does not enter consciousness. It is therefore by no means impossible for a relation which forms a part of the undistinguished background of a configuration to function in calling up another configuration in which attention centres on a certain line of activity.

We are now in a position to make clear the significance of the definition of instinctive behaviour given earlier. The relations which enter into a configuration constitute an 'overknowledge' or 'meaning' which the cognized sensory characters of the experience possess. So, too, may the further configurations, which tend to develop from the original one, be designated part of the 'meaning' of the given situation or 'overknowledge' accompanying the sensory content. Since, then, it would appear to be this '*configuration*' or *system of relations* that, by its tendency to evoke certain related configurations which embrace the same set of sensorial elements, initiates the instinctive activity, our preliminary description of instinctive behaviour as "an innately determined response to the cognition of a meaningful situation" would appear to be justified.

---

[1] F. Aveling, *Proceedings of Aristotelian Society*, 1926-7.

[2] Cf. *Instinct and Personality*, by the present writer.

[3] G. F. Stout, *Manual of Psychology*.

Now, obviously, two essentially similar sets of subject-object relations may be involved in the cognition of two very different sets of stimuli, *i.e.* two very different sets of experiences, as cognized, may, in this very important respect, have the same meaning. This enables us to explain the marvellous variety and variability of instinct stimuli without postulating the almost infinite number of separate receptor paths which is needed on the associationist view of instinctive action as a response to sensory stimuli. Similarly it enables us to understand what is rather inaptly called "modification of instinct by experience." Any set of sensations—or images or thoughts—may arouse an instinctive activity so long as they, as cognized, fall, in respect of the subject-object relation, into a certain configuration, or if they fall into such a configuration as will, by association as determined by certain relations included in it, call up that particular configuration. And this calling up of a further configuration, it must be remembered, need not be an explicit ideational process, but a mere changing of the configuration into which the given sensory experiences are cast as cognized.

The modifications which take place in the nature of the end situation which may bring satisfaction, likewise, depend on this capacity of a configuration, as a system of relations, to remain, in important particulars, essentially the same through many transformations of the sensations and other lived experiences which enter into it; or, to put it in everyday language, on the fact that many very different objective situations may all have essentially the same meaning for an individual. For example, a mad dog, a falling beam or an approaching motor bus may all have the same essential meaning for a man as objects to be avoided, *i.e.* though the characters of the lived experience are very different in each case, yet in each case they fall into a configuration, or system of relations, having certain essentially similar characteristics. Similarly the objective situation, in attaining which the resulting instinctive conation finds satisfaction, may be very different in each case. In one case it may be found in getting on the other side of a closed gate; in another in reaching a spot 10 feet to the right of the line of the falling beam; in the last in attaining the kerbstone. But in each case the situation attained has the same essential meaning for the individual concerned, *i.e.* that of his escape from a threatened danger. This means that a configuration having certain features essentially similar (particularly the nature of the subject-object relation) is formed in each case, though the elements of lived experience between which the relations of the configuration exist are to so large an extent different.

Similarly with regard to the modifications which take place in the *process* of instinctive activity. The movement from what we may call stimulus configuration to satisfaction configuration (*i.e.* from the meaningful situation in which the impulse rises to that in which it is satisfied) must, if it is to take place at all, pass through a certain series of changes, *i.e.* of transitional configurations—*which are felt as transitional*—and the resulting active attention process works with the materials of lived experience given in the stimulus configuration, and with such others as arise during the process of activity, in such a way as to bring the configuration through that series of changes to the final satisfying end configuration. Put in plainer language this means that the meaningful situation, or system of related objects, which stimulates the individual to activity, is dealt with by him in ways which seem to promise such changes in the situation as will make it more satisfactory. This process, normally, goes on as persistency with varied effort, until the end situation which gives complete satisfaction is at length achieved.

This study of instinctive behaviour, then, presents us with three facts: (1) That certain configurations are unstable; *i.e.* that they evoke a correlated configuration which results in activity that proceeds to change the relations subsisting within the total cognized configuration, particularly as to the nature of the relation between subject and object. (2) That certain other configurations are stable; *i.e.* they call up no correlated configurations which result in activity, so that, when such a configuration is reached in a process of activity, the activity comes to an end. (3) That between the former type of configuration and the latter there may occur a series of other configurations which are very temporarily stable, tending soon to give way to a different configuration, or relational arrangement, of the lived experience; this results in further activity. These temporary configurations in our own experience are felt as relatively satisfactory but transitional. They represent intermediate stages which must occur in any instinct process of any noticeable temporal duration or complexity, such as nest-building, hunting and mating.

These three characters of configurations must be attributed to something in the innate structure of the individual. It is this fact of structure to which we may apply the term 'an instinct.' To attribute these characters to innate structure merely implies the view that such structure predisposes certain lived experiences as cognized to fall into a certain configuration, *i.e.* to be cognized together with certain of the relations subsisting between them. Further, that certain of these configurations should be of an unstable nature, tending immediately to change in certain ways. Thus the structure of the creature determines (1) what experiences shall receive the focus of attention, (2) what shall fall into the background, (3) which of all the possible relations shall be cognized as subsisting between the fundaments or elements of lived experience (which include the self or subject[1]), and (4) which of all possible correlates shall likewise enter into the known configuration. Lest this statement be misunderstood, perhaps I should again point out that this cognition of a configuration does not necessarily involve the eduction of the relations and correlates entering into it. They may be merely *implicit* in the total configuration and never singled out and attended to in themselves.

That structure can so affect the configuration into which our experience enters would appear both from our knowledge of the influence of acquired experience and from the study of native tendencies. A familiar object attracts attention among a multitude of unfamiliar ones; a number of familiar objects is more readily grasped if they are seen in their usual relations to each other, indeed we tend to impose such relations on them by mistake where they do not exist; and familiar objects tend to call up the same correlates on all occasions. Among native tendencies one of the most striking examples of the influence of structure on configuration is the fact that one of the earliest objects which a baby pays attention to is a human face; this is a complex and not very striking set of stimuli, yet it rivets the infant's attention at an age when simpler and stronger stimuli attract no notice. Obviously it is something in the structure of the infant mind or brain that causes this set of visual experiences to fall readily into a configuration which holds the mind in attentive observation. There is therefore every reason to believe that the peculiar characteristics of certain configurations and the tendency of certain sets of experiences to be cognized in certain configurations, which we have seen reason to postulate in order to explain the function of intelligence in instinctive behaviour, may be attributed to innate facts of structure—either mental, physical, or psychophysical.

---

[1] Spearman, *The Nature of Intelligence.*

III. THE DISTINCTION OF APPETITIVE FROM NON-APPETITIVE INSTINCT PROCESSES.

Now out of this discussion of the relation between instinct and intelligence there arises the conclusion that an instinct only becomes dynamic when stimulated; *i.e.* it is only upon cognition of a certain type of meaningful situation that the appropriate train of instinctive activity follows. This is obviously the case with some instincts, such as Escape, Pugnacity and Repulsion. But some others *seem* to be dynamic quite apart from specific stimulation; they periodically press their demands upon us even though there is apparently nothing in the external situation to stimulate them. This is particularly the case with Nutrition and Sex. The Freudian School has emphasized this perpetual, or at least periodic, dynamic nature of the sex instinct, and many other psychologists seem to regard all the other instincts as being thus dynamic and demanding occasional outlet for their energies even though nothing in the external situation has occurred to stimulate them.

If this were so, the theory of instinct outlined above would break down, for it attributes the initiation of instinctive activity to the formation of an unstable configuration in the process of the cognition of lived experience. But the view of instincts as creators or accumulators of energy which occasionally must needs find an outlet is, I believe, a grave mistake. Instincts never become dynamic unless stimulated. They only appear to do so, because in certain cases the stimulus is not obvious. For example, sometimes the stimulus is ideational; recurring thoughts, brought up by many entirely extraneous associations, may be quite adequate stimuli of any of the instincts in man. Further, in the case of Sex and Nutrition, internal processes and secretions alone, apart from any environmental contacts, constitute adequate stimuli; *i.e.* the resulting experiences so modify the background of consciousness (even if they do not attract attention to themselves as visceral sensations) that the resulting configuration is unstable and falls into a new configuration which results in activity in the line of the instinct concerned.

This, I submit, is the explanation of Appetite. If any useful distinction is to be drawn between Instinct and Appetite, it must have reference to the peculiar nature of the appetitive stimulus as dependent on the functioning of the organic structure. Both instinctive and appetitive behaviour are dependent on facts of structure in the living organism. But the fact of structure, the effect of which distinguishes instinctive behaviour, is one which determines the occurrence of a certain type of response to a certain type of stimulus. On the other hand the fact of structure, the effect of which distinguishes appetitive behaviour, is one which determines the occurrence of a certain type of stimulus. Instinctive behaviour may or may not be also appetitive. *An Appetite is a tendency to certain behaviour which is due to the stimulative effect of certain cumulative or recurring processes of the living organism.* The instincts of Nutrition and Sex are strongly affected by Appetites; but this is not normally the case with any other of the more important instincts. Drever has enumerated the appetitive tendencies as follows[1]: Hunger, Thirst, Sleep, Sex and Nausea. To these should be added Excretion, Breathing and the tendency to secure Change of stimulus. This last mentioned is probably an effect of specific fatigue. It is manifested in many of our minor bodily adjustments and also in the Wandering instinct. These are the most important of our innate appetitive tendencies. But in addition to them there are appetites which may be acquired, such as those for alcohol and tobacco.

The most important point that arises from this discussion of Instinct and Appetite is the fact that the majority of the instincts do not manifest that tendency to constant or periodic recurrence of their peculiar type of behaviour which is characteristic of Appetite. The recognition of this fact should modify some of the practical conclusions commonly drawn from the psychology of instinct. It is entirely wrong to suggest that the only way to avoid destructive effects of instinctive energy is to 'drain off' that energy into innocuous or sublimated channels. This only applies in so far as some unavoidable appetitive process periodically stimulates the organism to an instinctive activity. Of the major instincts the only ones normally affected thus are Nutrition, Sex and Wandering. But even in regard to these the problem is better stated, not as that of finding a means to 'drain off' the energy, but of finding, if possible, some proper sphere for the instinctive activity, or, if this is impossible, of keeping the unstable configuration out of mind by concentrating interested attention on other things. With those instincts not affected by an Appetite the problem of avoiding their expression on inconvenient occasions is open to the, usually, much simpler solution of not allowing them to be stimulated on such occasions.

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[1] Drever, *Instinct in Man.*

IV. THE DISTINCTION BETWEEN INSTINCTIVE TENDENCIES AND GENERAL MENTAL ENERGY.

But instinct, even when the stimuli of appetite are taken into consideration, cannot account for the whole dynamic of intelligent human and animal behaviour. This point must, I think, be made clear, lest the view of instinct and appetite here put forward be misunderstood. The impossibility of accounting for all behaviour by reference to specific instincts is plainly to be seen in considering the facts regarding play, particularly those kinds of play which consist in sheer activity for activity's sake. This, which might be called *pure* play, is best seen in young animals. Most human play is too sophisticated to be so described. Much of it, too, is genuine instinctive activity, for the human being often places himself deliberately in a position where one or more instinctive tendencies will be stimulated, as in hunting, team games, and children's play with bricks and dolls. Yet even here there is an element of activity for activity's sake in that this is done in order to enjoy the consequent engagement of interest in action; and a very real satisfaction may be obtained in this even though the instinctive end is not reached.

For the explanation of pure play we must, I think, recognize the existence, besides appetitive stimuli and the specific instincts of a general tendency, of an urge, drive, or conation, which never allows the living conscious creature to remain entirely inactive and, providing the organism is efficient, never allows it to remain for long even relatively inactive. If none of the conditions are present which cause man or any of the higher animals to pursue one or more of the specific instinctive ends, then there soon arises the urge or desire to do something, it matters little what. The satisfaction of the conation which arises under such conditions may be found in the pursuit of some of those fragmentary or partial ends which ordinarily form mere stages in the pursuit of an instinctive satisfaction. The puppy can chase his brother, and find satisfaction in doing so, though he never kills him even if he catches him. He can paw and gently bite his brother in playful fight and manifest every sign of complete satisfaction at the end of the process, though he has inflicted nothing in the nature of injury. He has achieved none of the ends which the hunting or fighting instincts demand for their satisfaction, and he may not have even attained that success which we would assume would be necessary to give satisfaction to an 'impulse of rivalry[1],' if such had been operative. Yet he is content, for he has done all that, in those conditions, his nature demanded. It demanded that he should *be active*; and that he has been to the full.

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[1] McDougall, *An Introduction to Social Psychology.*

The difference between instinctive behaviour and play is the difference between a conative tendency with a specific end and one without it. If it be asked why the one type of tendency can only arrive at satisfaction in the achievement of a specific end, the answer is that it is because it is initiated by a specific set of conditions, *i.e.* a specific stimulus. The specific stimulus has created an unstable configuration which forthwith becomes modified in such a way that only by proceeding through a succession of changes to a certain other configuration can relative stability again be attained. In other words, the specific stimulus has resulted in a peculiar condition of felt mental tension which can only be ended by the achievement of a certain kind of perceived result. This process of mental activity, which proceeds in conjunction with physical activity, is what in psychological language we call 'conation.' It begins with the stimulus and ends with the satisfaction. Without that particular kind of stimulus, that particular kind of satisfaction is never sought. But in the case of pure play the situation is different. There has been no specific stimulus creating a peculiar kind of unstable configuration which needs must undergo a process of perpetual modification until a certain end is reached. Nevertheless, to take the case of the puppy which starts a fighting game with his brother, the configuration into which his lived experiences fall in cognition at the moment before he begins the game is evidently unstable. It undergoes such modification as to include expectation of action. Why? Surely our own minds supply the answer. They are never inactive except in sleep. Is it likely that, in its own much dimmer and much more limited way, that of the puppy should not also always be active? And, as is the case with ourselves, those times when his nervous system is well rested and well supplied with blood are times when we may expect the puppy's mind to be most active. And these are the times when he is most apt to play. Perhaps, then, we can understand what happens in the puppy's mind as he wakes and stretches himself after sleep and observes his brother lying on the grass before him. The configuration thus formed is not one of the type formed under the influence of instinct stimuli. But his mind needs must be active. That configuration, under the influence of relations which enter into it, calls up and gives place to another configuration. But the limits of the possible configurations into which a certain complex of lived experiences can fall in the mind of a puppy are very narrow. Soon, in the process of his mental activity, there is formed a configuration into which enters an expectation of activity of a kind typical of the puppy, and forthwith the expected activity results. Now a new set of lived experiences flow in upon him and are formed in the process of cognition into a varied series of new configurations. This series, on account of the similarity of the circumstances, has considerable similarity to those which would arise in real fighting, but it also has considerable differences; in particular there is no anger because there has been no experience to arouse it. Consequently the playful fighting shows precisely concomitant similarities to, and differences from, real fighting. Thus the game goes on until fatigue, or some other cause, changes the lived experiences through which the puppy is passing so fundamentally that in cognition there arises a fundamentally different configuration and activity temporarily ceases or takes a new form.

Playful activities in animals then, though essentially different from instinctive in that they have no necessary specific beginning and end, can nevertheless be explained in accordance with the same general principles. The *Gestalt* psychology, as here interpreted, enables us to form a consistent view of the function of intelligence in both instinctive and playful behaviour.

Incidentally, two most important distinctions have been drawn in regard to conation: (*a*) that between the specifically conditioned instinctive and appetitive tendencies on the one hand and, on the other, the general mental energy such as is manifested in play; (*b*) that between the recurring appetitive tendencies due to internal stimulation and the casually stimulated, non-appetitive instinct tendencies.

PROTOPATHIC-INSTINCTIVE PHENOMENA IN NORMAL AND PATHOLOGICAL MALAY LIFE.

BY F. H. G. VAN LOON.

IT is a generally accepted and also experimentally proved fact, that a negro or other primitive person, brought over to a Western or Northern civilized country and surroundings, physically will remain a negro, and that the descendants of a negro couple, at least during many generations, will remain black, long-legged, thick-lipped and curly-haired. In other words, we all know that a negro, Australian native, a Chinese, or a Malay has certain well-defined and distinct physical qualities, which remain constant under changed conditions and so distinguish them one from the other and all from the white Indo-European races.

It is also generally accepted that the various races, and especially the primitive ones, show psychical characteristics which as well as the physical ones can *not* be ascribed only to climate, food, sicknesses and the like factors, but also are real *racial inherited* qualities, as constant as their colour or the shape of their skulls.

Similarly many facts can be indicated, which (as in the case of the world-spread Jews) seem to prove a great degree of constancy of certain racial qualities during many generations under quite different circumstances; but as soon as one is asked to give a scientific proof, even that a negro has other psychical qualities, or characteristics, or tendencies, than an Englishman or a Dutchman, the problem proves excessively difficult, and when one is asked to prove a difference in the possibilities of evolution, even between an Australian native and a white man, it becomes evident that scientific study up till now has given very little definite results in regard to these problems of racial psychological and hereditary qualities.

It is in this matter as in many others: the truth, the facts, the principles generally accepted and intuitively and unconsciously approved of, turn out to raise difficult problems, as soon as modern study with its scientific methods and demands replaces the old belief in 'authority,' 'general opinion' and 'established facts.'

The first result of modern methods of study is often the breaking down of cherished tales; the second, that in many circles the opposite of the old theories is accepted as lightheartedly, only because science could not prove the old 'axioms.'

Especially in the present day this inclination, which ultimately makes of every fact a fiction, all knowledge a supposition, may be observed; and if we see it even in simpler physical problems, how far stronger its influence and how much easier its results must be in our psychical ones—where indeed Science finds the greatest difficulties in avoiding faults and establishing facts. Now psychology is a new branch of science: it has not yet formed many generally accepted theories and has gathered relatively few 'certain facts'; but it has nowadays another great drawback—the sudden and general interest, namely, of half the world who want to apply the results, or even the hypotheses, of psychology to all sorts of practical ends—to solve social, economical, sexual and political problems at once by the help of scientific psychological data—and who forget that psychology has only just begun to study those mental factors which are at the bottom of most human problems.

This, I think, is the main reason why it should now be popular to maintain that after all there is very little *real* difference between the psychical capacities of various races, that environment counts for nearly everything and that very little is genuinely inherited. This also is why such a view is often supported by the argument that it is impossible to produce scientific evidence to the contrary.

Let us consider why it is often very difficult to demonstrate any psychical difference between individuals of distinct races.

In my opinion this is chiefly because attention has been mainly concentrated upon *intellectual aptitudes.* For certainly the main racial differences are not those which belong to the 'upper levels' of the human mind. They must be sought and can be found in its basic foundations, in the deeply rooted vital and instinctive tendencies and those connected with them.

So far as the conscious guidance of instinctive impulses go, all men no doubt tend to react in similar ways. If therefore we are to look for basic instinctive differences we ought to seek our evidence not in normal but in *abnormal* behaviour, where the ordinary intellect-guided conduct of man has been substituted by confusion, hallucination and insanity, or has at least been weakened by strong instinctive trends and affects. For this evidence we must turn to a study of the mob, and especially of individuals or groups in whom intellectual control still is relatively weak, as *primitives* and *children.*

Thus the best method is the comparative study of the psychical abnormalities of forms of insanity special to certain races, or of special symptoms and phenomena which may be observed in all kinds of psychoses.

Further, instead of losing ourselves in detailed and theoretical study directed upon our own highly complicated psychical phenomena, it may be easier to investigate the symptoms and mental aberrations which have arisen on different soil in forms of mental development probably less complicated.

I have had an opportunity to study the Malays and their very interesting psychical reactions during more than ten years of intimate contact with nearly all the representatives of these fifty millions of yellowish- and dark-brown natives of the Dutch East Indies, amongst whom *Amuck* and *Latah* are the two best-known forms of insanity.

I shall not try to give you a romantic picture of *Amuck* and *Latah*—it is sufficient to describe briefly their main phenomena. *Amuck* is the absolutely sudden and unexpected murderous attack of the Malay man, who, without any known reason, suddenly jumps up, seizes his *keris* or another well-sharpened weapon, if he is a soldier, his gun or his bayonet, and attacks, wounds, or kills anybody who happens to stand in his way, till the *Amuck*-runner himself generally is 'laid low.'

Now I found at Batavia, in several cases of *Amuck*, that very often these murderous *Amuck*-runners were suffering from infectious diseases—malaria often, pneumonia, acute syphilis, typhoid, etc., and that often a good dose of quinine cured the man both of his malaria and of his confusion. For *Amuck is a sudden state of hallucinatory confusion* in which the patient tries to fly from a menacing danger. The danger is often a tiger, the most feared animal, whose name the Malay even does not dare to pronounce. Or it may be an enemy armed with a *keris*. The instinctive reaction to this danger is the flight and the attack, blind and unlimited. The patient kills his own family and flees till exhausted or till his fear and terror have died out.

We may admit that here, if ever, we have an example of pure *instinctive reaction to danger*—where agony and terror are leading to a certain form of reaction not quite unknown to us under totally different circumstances.

Now *Amuck* is not confined to the Malay races. I know of several cases of homicide, even in Great Britain, which seem to be identical with the Malay *Amuck*. For instance, an English soldier, who had malarial attacks in Macedonia during the war, several months afterwards in his own country suddenly 'went mad,' seized a weapon and in his flight wounded several people. He also, like the Malay, remembered very little or nothing of what had happened. Sometimes the patient remembers later that he saw the tiger or the man menacing his life. This is a kind of last and vague memory. After that he is, as the Malay says, *mata gelàp* (black before the eyes). It is certain that a man under these conditions sees and hears very badly—that often his normal sensory functions have been entirely eliminated by the strong emotion. We ourselves have phrases such as 'blind rage,' or as *voir rouge*.

However, the European seldom runs *Amuck*, although he may get fever or be confused. He is in fact so far different from the Malay that he has *suppressed* this instinctive way of reacting, when threatened by danger to life; and, at least in favourable circumstances, he reacts in a more efficient manner. Instinct plays a less important part and experience and intellectual control a far greater one.

It can be said that, not only in *Amuck* and *Latah*, but also in other psychical phenomena of normal life, in the *malu* feeling (unbearable shame and embarrassment, especially when made ridiculous in public), in *mata gelàp* (blind rage) and in the *binggung* reaction (losing one's head), etc., the Malay shows the same characteristic weakness, a *lack of resistance against sudden emotion*. Especially strong affects of a primitive, instinctive type (anxiety, fright, terror, rage, sexual jealousy) are apt to overcome all intellectual brakes and flood the whole of consciousness—as is very clear in the frequent *Amuck* syndrome, and as we also see in *Latah*.

In *Latah* a sudden fright or other strong emotion causes the Malay woman, mostly of an average or elderly age, to enter into a curious state of hyper-imitativity, in which she loses all self-control and imitates immediately and most precisely what is done before her or said to her. All normal control of actions and reactions is swept away by the sudden emotion—and she becomes the puppet of the child or grown-up who may amuse himself with the poor old lady by making her throw all her dishes on the ground, or even strike an honoured guest—in compulsory imitation of what is done before her.

Generally, after being frightened, the *Latah* woman utters or shouts a few mostly highly erotic words or wishes normally totally repressed and hidden, or abusive language, even about her own mistress or master.

An enquiry amongst the physicians of the Dutch East Indies showed the remarkable fact that *Latah* practically is seen only with Malay women (only in 1 per cent. of the cases with men); a few cases also were known amongst Indo-European and Indo-Chinese women. Like *Amuck* it was *never* seen with *pur sang* Europeans.

A second interesting point was that *Latah* in by far the greatest percentage (5 per cent.) occurs with those women who are or have been *servants* (*kokkie* = cook, *babu* = maid, etc.) with white masters, or who have been at least during a long period of their life *in a subordinate position*: who are accustomed to obey orders without any criticism, often without any thought, who are leading indeed a sort of automatic humdrum life.

There is one other special feature of *Latah* to which I will now refer briefly. Many of these old women declare that their *Latah* symptoms began in their youth, generally after their marriage, when they had had one or more very 'dirty' dreams—of having *e.g.* been attacked by male organs, which from all sides approached them—so that they awoke with a scream, shivering and perspiring for fear. This type of dream most obviously belongs to the (scarcely repressed or hidden by symbolism, etc.) wish-dream and seems to point to a sexual conflict, which with the native men is scarcely to be expected!

In this *Latah* syndrome we again see the overwhelming of the whole consciousness by a sudden fright—followed by a state of mind in which the whole behaviour, the feeling and the reaction, seems to be subordinate to the person who made the patient *Latah*.

It is interesting to remark that these pathological conditions are in absolute harmony with those appearing daily in normal life, where we find the same group of psychical characteristics. In *malu*, *binggung* and in *mata gelàp*, for instance, we also see a high degree of emotional irritability, a relatively weak resistance to sudden emotion (fear, fright, etc.). In *Latah* we further notice a very high degree of suggestibility and imitativity, and this is also seen in daily life; the Malay very easily takes over new opinions, fashions, or beliefs; whilst his strong emotionalism causes him to be rather hedonistic, in avoiding all *susah* (trouble) which might disturb his equanimity.

However, this harmony between normal and pathological phenomena, though it is interesting, does not explain sufficiently why they do occur *in this special form, with such a strikingly similar progress in all cases.*

In this connection it is of great interest to remark that *Amuck* and *Latah* are seen *only* in the Malays (and some other primitives), but we must not forget *that we may see related phenomena in civilized peoples and races—not individually*, but more especially *in the group, in the crowd* and *in the mob.*

In a *panic*, for example, we see the crowd reacting in the same way as the Malay running *Amuck*—in unlimited flight, driven by mad terror, running over anyone who comes in the way; in the revolutionary mob we see indeed sometimes the same blind murder, the same 'running amuck,' driven by instinctive fear and rage! And also we may find in many crowds the same conscious 'contagion,' the taking over by intuition of emotions and moods; and also the compulsory imitativity (*mass suggestion*) which we saw in our *Latah* lady.

We may remark often the imitation of the leader, of the 'strong man,' whose emotions and actions control and lead the crowd or the meeting, whilst on the other hand the leader himself is often influenced in turn by the crowd.

So in the mass we see, even with civilized races, exactly the same phenomena as we see in the Malay (and other primitive *individuals*). It stands to reason that we may consider these mass phenomena as a *regression*, a falling back upon more primitive modes of reacting, which very often may be seen in animal and infant life and with primitive peoples in whom the instinctive element is strong, whilst the intellectual control or influence is relatively slight. We know that in the crowd those characteristic 'lower' ways of instinctive feeling, thinking and (re)acting have been observed (Le Bon).

If now from this point of view we look more closely at the *Amuck* syndrome, it is at once obvious that it is a special form of totally automatic reaction to danger, in which the instinct of self-preservation aroused by fear, fright and anger, leads to the primitive reaction of unlimited flight and useless assault of anyone who happens to be in the way.

Now it strikes us that the whole process, from the often vague and crude hallucination until the end of the wild flight, does show a great resemblance to that mode of perceiving and reacting which in physiology has been described by Head, Rivers and Riddoch as the *protopathic stage of sensibility* and *mass-reflex.* This is an older, more primitive stage in the development of feeling, in which the sensations are vague, crude, unpleasant, strongly irradiating, without any gradation; which the subject is unable to localize even approximately, and of which he cannot say whether the stimulus becomes smaller or stronger; which leads also to a rather crude explosive-like movement that overshoots its mark, but is effective in so far as it removes the subject from the danger zone. (Example: hand touching hot stove, withdrawn in a crude, unnecessarily extensive movement, involving even the whole arm or the whole body.) This sort of reaction shows yet another characteristic, the 'all or none' principle, which the English physiologists,

K. Lucas and Adrian, discovered in their experiments when stimulating electrically a nerve fibre. At a certain strength of the stimulus they obtained a complete reaction (in the muscle attached to it), which did not increase when the stimulus was increased, and which totally disappeared when it was lessened; it was indeed an 'all or none' reaction.

If we now consider once more the *Amuck* and *Latah* phenomena, then it is clear that they do show us indeed such 'protopathic' and 'mass-reflex' characteristics in their affective and apperceptive part, as well as in the following reactions.

The sudden, vague fear, which irradiates and overwhelms all consciousness, which generally is not fixed to any distinct image, and which comes suddenly in its full strength, leads to the explosive, violent, unnecessarily far-reaching flight and murderous attack; the same as we often may observe in the anxious or frightened animal, without any gradual relation between the strength of the stimulus and its effect.

Instead of this instinctive fear and rage, and the aggressive flight in *Amuck*, we see a totally different reaction to fright or fear in the *Latah* woman. Her kind of reaction to fright we also know to be instinctive. It is a form of gregarious behaviour, in which, after fright, we see a sudden and total overwhelming of consciousness by the vague unpleasant affect. This results in an absolute subordination of the individual to the leader and the gregarious interest, which causes the whole group to feel and act as a unit.

Especially the *instinctive emotions* (fright, fear, anger) are at once and totally taken over by the herd, as are also their reactions of flight and attack or immobility. We see exactly the same in *Latah*: the emotions and their outward projection in mimic and other movements are taken over with lightning speed and very accurately. The subordination of the *Latah* patient we also may consider an instinctive mode of reacting to danger, to the fear-fright affect. This, however, only occurs in specially favourable circumstances, as, for example, in those Malay women who have been living during a long time in a subordinate position, fulfilling their rather simple daily tasks and obeying orders without any development of independent judgment, action, or even intellectual discrimination. In these individuals we see not only the normally already high degree of subordination, which in the Malays and especially in the Malay woman is very strong, but the already small resistance against emotion and suggestion. The normal 'superior' way of intellectual and independent acting is totally overwhelmed, so that the otherwise repressed protopathic reaction can occur. Exactly in the same way Head saw in his experiments protopathic sensibility coming back, when circumstances had weakened the hardly restored and not yet resistant epicritic skin-sensibility—the higher mode of feeling which, in normal daily life, enables us to discern what we are touching or what is touching us, and to discriminate degrees of pain or heat produced by the stimulus.

In normal conditions this protopathic sensibility is *repressed* totally, so that we are even unaware of its existence, but it appears when a sensitive nerve is torn or cut through; the first stage of healing then shows only the protopathic qualities. These disappear again—partly by *fusion* with the higher epicritic sensibility, partly by a total repression, which of course is necessary in order to make clear perception possible. For it is obvious that a *total* repression of the more primitive process is necessary, in so far as it cannot be combined with and taken over by the new, refined, and more efficient mechanism which Man needs and uses perpetually. The protopathic way of feeling and of reacting is indeed quite sufficient in many conditions of animal life, but is quite inadequate for even the most primitive man, who has to adapt his movements to different and graduated sensations.

Pathological conditions in peripheral nerve function revealed to Head the existence of protopathic sensibility, until then totally unknown; Rivers pointed out the close relation between this mode of feeling and the "affective aspect of the instinctive reactions," both being equally hidden and repressed, but "which lie ready to spring into activity whenever the situation calls for an emotional rather than an intellectual response." He also suggested that "it is emotional or affective experience which is especially liable to be suppressed." And, further, he applied these ideas to the domain of the higher mental processes, and compared certain characteristics of human instinctive behaviour to those of protopathic sensibility.

And without any doubt also in us, civilized and intellectually developed specimens of the genus *Homo*, these protopathic mechanisms still are present in part and even play a great rôle in our more complicated affects and emotions (which after all have originated from the lower affective constituents of the older instinct), in our whole life, in our thoughts and actions; for these parts of protopathic instinct were useful also in the higher, more efficient and epicritic form. But another and important part of our older instincts has been suppressed and in normal conditions never can arise; and it seems to me that the pathological conditions which I have described show us the most clear examples of protopathic phenomena on the psychological level.

Undoubtedly similar reactions might be observed in other primitive peoples. It is a well-known fact that the most primitive Australian aborigines, when frightened, show a total immobility, which we may consider as a very ancient instinctive reaction; and mad, unlimited flight, even in the face of relatively small danger, occurs among most more or less primitive peoples, even among the Chinese and Japanese.

As mentioned already, the cultured races now seem to differ from the more or less primitive ones, in so far as their control of these lower, suppressed mechanisms is stronger, individual experience (which forms our intellectual knowledge) having become sufficiently large and powerful. The civilized man will therefore have other, more useful, intellectual instinctive reactions which will go on developing with and by the demands of modern life and strain. But as soon as he loses these higher qualities of intellectual control—in the mob, in the low-spirited political meeting, in the 'mass-mind'—then the same lower, suppressed phenomena arise again, which among primitive people may still be observed in the individual.

In sexuality also, we can in civilized races observe a good deal of only slightly repressed protopathic affects and reactions, which very easily turn up; as, for example, in alcoholic intoxication, in war-time, in the crowd, etc. And perhaps one might say that the sexual instinctive *desire* is the vague, crude, unpleasant, the *protopathic* side of it, whilst sexual *love* forms the *epicritic* part, which discriminates, and graduates; which gives no 'all or none' reaction, as the desire does.

Undoubtedly again we see more of the former, the crude sexual desire, in primitive life, as among the Malays. That there are *relatively* few murderous conflicts is accounted for by the fact that sexual relations and intercourse are very easy, but they form still a very great part of Malay criminality. *Rape* also, often of very young children, is a very common crime.

Undoubtedly sexual rivalry is one of the few feelings which may, even after a long time, lead to bloody conflicts; for in the sexual sphere we can observe with the Malays an often strong fixation of the instinctive feelings on a well-defined person: the first step on the way which leads from instinctive passion to Love in its loftiest sense.

This *fixation* of the instinctive affects and emotions, on a definite object or person first, on an *image* later, seems to me to be perhaps the psychical substitute and equivalent of the physiological *localization* mechanism. This conception may help to elucidate the resemblance in biological development between those psychical instinctive systems and the physiological ones discovered by Head.

I have mentioned already a few emotional phenomena of *normal* Malay life, in which the same 'protopathic' feature can be observed: *malu*, *binggung*, *mata gelàp*. The last one forms a bridge to real *Amuck*, especially when the *malu* feeling, or some other instinctive (sexual) affect, has been one of the factors causing the *mata gelàp* rage.

Another way of reacting to fright or fear, which is very often seen, is the *stupor*, very frequently shown towards Europeans when they enter into relations with *orang udik* (inland natives who seldom see Europeans) and put questions to them. This stupor seems closely related to the instinctive immobility-reaction, and shows the elimination of all voluntary action. Generally speaking, the Malay is not a violent character, and only in abnormal conditions will he attack and murder. His gregarious instincts being still very strong (as *Latah* showed us), he generally will commit violent acts only when in a crowd or group. One man will practically never attack a European, but a group of them will gather and suddenly attack and slaughter most cruelly—often for a trivial motive—the white man against whom they have a grudge. Here again the 'mob-spirit' arouses and strengthens the low murderous instinctive tendencies.

An exception to this rule is the Atchinese, who attacks and kills the *kafir* (unbeliever) in order to be killed himself, and so get an easy chair in the Islamic heaven.

This strong gregariousness, which leads the Malay always to seek the company and support of his friends when in difficult positions, of course leaves him very little personal initiative, especially in emotional circumstances. A strong emotion (aroused, for example, by seeing an unknown instrument like a kodak, or by being present at an accident) causes him to run away at full speed, as if panic-stricken. It may also cause at first a state of absolute stupor and immobility, but in any case he seldom or never will offer any help in a useful way. Only after a European has arrived can efforts to rescue be organized, as I have sometimes observed in accidents (kampong blown down by cyclone, shipwreck, etc.).

It is clear that in all these phenomena we again see, beyond the other 'protopathic' and 'mass-reflex' characteristics, the 'all or none' principle which so often causes the effect (murder, suicide) to stand in no normal relation to the original cause (often a trifle, but always with some emotional character, like hurt vanity, jealousy, etc.). Undoubtedly also the *hara kiri* suicide of the Japanese could develop to such an astounding degree because the instinctive-affective basis of this practice is the same as with the Malays; it has been strengthened in them by special customs and beliefs.

But we must never forget that both Malays, Japanese and Chinese, who in certain circumstances face death without showing any fear, are yet subject, in a high degree, to panic, the *instinctive* drive of which shows itself to be stronger than intellectual control.

We have thus seen in the Malays (who are not a low primitive race, but who show in certain respects more primitive features than the white races), in pathology and in normal life, many psychical phenomena in which a lack of resistance against, and the being overwhelmed by, certain instinctive affects leading to reflex-like reactions could be observed. The *normal* phenomena are not purely protopathic or of the nature of the mass-reflex; for with the Malays a fusion of protopathic with higher, epicritic apperception, leading to adequate reaction, has already certainly taken place.

Many of these 'atavistic' mechanisms may be observed in animals, partly in individuals, partly in the herd-life as gregarious phenomena, but also we frequently find them in our children, who often show typical 'protopathic' symptoms in their fear, sorrow, and anger, and in their reactions to these.

The 'pavor nocturnus'—the nightmare in its worst form—of our young children may be regarded as having a protopathic character, being a vague anxiety of a most unbearable and unpleasant type causing the well-known bodily reactions of screaming, terror-torn facial expression, and general agitation and unrest, exactly the same as one can observe with young animals in danger and fear, who scream and try to seek protection with their mother.

In many of our dreams the same otherwise repressed instinctive affects most certainly play a rôle—in my opinion even greater than that of the much less repressed and far more innocent emotional complexes of our own individual experience. The same may be true of many of the neuroses and psychoses—in which far too much (*e.g.* fear and its reaction) has been ascribed to the repression of *personal* experience, whilst in my opinion every trauma, be it physical or psychical, can give rise to regressive pathological symptoms—the control of hidden forces having slackened.

A strong argument in this direction is the relatively small number of principal psycho-pathological syndromes, which always and again show nearly the same group of symptoms; regarding the symptomatology of psychical disorder as *regressive* phenomena which show the mechanisms, both affective and effective, of earlier stages of development, might increase our insight into many of the psychoses.

In 'pavor nocturnus,' and also in *Amuck* and in *Latah*, there is still to be remarked one symptom which is very important, namely, the dissociation of consciousness which is complete in the former two, so that there is no remembrance at all of what happened during the attack; after awakening there is no knowledge of anything extraordinary having happened.

In *Latah* this amnesia certainly is not complete, but always memory is very vague, and it strikes the onlooker that there seems to exist a state of consciousness, quite different from the normal one, and resembling very much an hypnotic state.

Rivers has referred to this dissociation, in its most complete form, as alternate consciousness; it is like that which occurs in the well-known cases of 'double life' and 'double personality.' He regards these also as a special form of "repression under morbid conditions," in which early instinctive modes of reaction tend to reappear.

It seems to me that *Amuck* and *Latah* provide us with striking examples of such morbid conditions, where the special character of primitivity is the factor which enables these modes of reaction to arise more easily than with other races.

In normal Malay life, also, we meet many conditions in which dissociation plays an important rôle; in the so-called cases of *kasurupan* we see the possessed man, woman or child in terror-stricken flight, acting like an epileptic in a 'fugue,' playing the rôle of the animal or person—sometimes a bad spirit or a Messiah—and often found at a great distance from his kampong; driven, not by supernatural forces as the native thinks, but by the instinctive trends of his dissociated consciousness.

In daily life also one often may observe similar symptoms which point in the same direction. We once had a Malay boy, who lived a long time in our house, behaving and working quite normally as *djonjos* (boy) whilst he had lost all remembrance of a former period in which he had been a chauffeur! We observed the same in a *babu* (maid), in the hospital, who had absolutely forgotten how to cook—as was found out by a nurse who had known her several years ago as a perfect cook. In both cases they learnt again their forgotten capacities, and found as explanation only a *Saja lupa*—"I had forgotten it."

It seems to me, that in these lower, basic layers of the human mind, in the early instinctive and inherited qualities or tendencies, and in the way and degree in which they have been either repressed or combined with our more adequate forms of instinctive and intellectual behaviour, we may find the real differences that exist between the human races. To investigate these differences in this way is better and easier than to do so by comparing their ways of thinking, calling them prelogical or logical, or by testing them with far too complicated experiments, only useful with highly developed cultured man.

MORALS AND SUPER-MEN.

(SOME ETHICAL PROBLEMS FROM THE PSYCHO-ANALYTICAL STANDPOINT.)

By R. MONEY-KYRLE.

Introduction.

Religion has been defined as: "un ensemble de scrupules qui font obstacle au libre exercice de nos facultés[1]." But definitions that are epigrammatically expressed seldom cover more than half the common connotation of the concepts to which they are applied. And this is no exception; for the totality of a man's inhibitions does not, as a rule, exhaust his religion. I suggest, however, that such a description is adequate to delineate the scope of morals.

It may be objected that there are inhibitions that are not moral and morals that are not inhibitions, and that the proposed definition neither is covered by, nor covers, the common meaning of the word. But I think that these objections are less weighty than they seem.

Conscious inhibitions are clearly moral. But a man may be unable to do something of which his conscious morality approves. Such inhibitions he would not at first regard as moral; but psycho-analysis would show that they are due to an infantile morality that had become unconscious. Thus all inhibitions are, in a wide sense, moral.

Again, most morals are clearly inhibitions. But there are 'shalts' as well as 'shalt nots' in the ten commandments. Actions determined by such precepts do not appear to be inhibitions. But if they are the free expression of altruistic inclinations they are not moral[2]. And if they are not free they are based on inhibitions. Thus all morals, in a narrow sense, are inhibitions.

I will therefore define morals as the totality of human inhibitions. Other definitions could be given, but this one seems to accord with the original meaning of the word—with a meaning that still requires a name.

There have been free-thinkers, perhaps in all the great civilizations of the world, who have seen clearly that many religious inhibitions are based on ignorance and superstition. And there have been sophists, since the time of early Greece, who have generalized this observation and have assumed that the rational man would be free from all internal restraints.

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[1] Solomon Reinach, *Orpheus*, p. 4.

[2] In the first meaning of this word.

Such a conclusion has profoundly disturbed the minds of other thinkers, and since the days of Socrates there have always arisen philosophers to combat it, and to seek a rational foundation for morality. Sometimes these anti-sophists are merely shocked because their own irrational inhibitions are threatened. But often they are moved by the consideration that without restraints civilization would be impossible. Some, while seeing that such restraints are necessary, have believed them irrational and have taught that rulers in their own interest should promote the ignorance and superstition of the masses. Even Plato believed that the workers of his republic could only be reconciled with their lot by myths invented for the purpose by the guardians. And such a concession is the thin end of the wedge that leads to the view of Thrasymachus that the *Republic* was written to discredit. In the same principle Dostojewski's Grand Inquisitor saw the foundations of the Roman Church. But this solution did not satisfy Dostojewski; for in *Crime and Punishment* he created a character who, although free from superstition, failed to free himself from morals.

To-day the same problem presents itself in a new form. Psychoanalysis removes inhibitions. What would a completely analysed individual be like? Would a society of such individuals be stable? Would it be pleasant?

TYPES OF INHIBITION.

Inhibitions may be either conscious or unconscious, and conscious inhibitions may be either based on fear or accepted by the ego.

Conscious inhibitions based on fear are again of two kinds; for the fear may be rational or irrational. Thus if a man refrains from stealing because he does not want to go to prison, his inhibition is conscious and rational. But if he refrains from stealing because he does not want to go to hell, his inhibition is conscious and irrational.

Conscious irrational inhibitions depend upon ignorance and superstition. But conscious rational inhibitions based on fear are an insufficient protection for society. Therefore those who believe that all inhibitions are based on conscious fears do not desire to educate the masses.

But there are also conscious inhibitions accepted by the ego. A child may at first refrain from stealing because stealing is detested by someone he loves; and because he fears to lose this love. But since he tends to imitate those he loves[1] he will adopt this disapproval and will hate stealing of his own accord. Such inhibitions are accepted by the ego; they are not based on fear, but on the imitation of a hero.

The hero may be a real person or a fiction; but belief in his existence does not affect his imitation. Many Christians no longer believe in Christ; but they love him and try to follow his example. George Moore's St Paul remained a Christian even after he discovered that the Christ he worshipped existed only in the hearts of men.

Thus conscious inhibitions accepted by the ego are not based on ignorance, but on imitation. They cannot be destroyed by argument. But they can be destroyed by a new love. If a boy finds a new hero, he will acquire new scruples and will lose the old[2].

Many inhibitions are unconscious. They were perhaps conscious to the child, but they have been forgotten. I suppose that they include both rational and irrational inhibitions based on fear, and inhibitions accepted by the ego. That part of the ego that contains such unconscious inhibitions is called the super-ego.

The moral prohibitions of the super-ego are formed like those of the ego. They are the prohibitions of an infantile ego that has become unconscious. They were originally the supposed commands of parents and nurses which have been adopted or introjected.

Since the super-ego is unconscious, its morality is automatic and without adaptability. Unlike conscious morality based on fear it is independent of ignorance and immune to reason. Unlike conscious morality accepted by the ego it is independent of present affections. It is unchanged by a change of allegiance.

But by analysis the super-ego can be made conscious, and then it is amenable to the same influences as the ego. Those inhibitions that are based on rational fears will remain. Those that are based on irrational fears will be removed by knowledge. And those that have been introjected may be lost if the old allegiance is incompatible with the new. Thus the man whose ignorance both of nature and of himself had been removed would lose all inhibitions based on irrational fears and outgrown loves. He would retain only that morality that was founded on rational fears and on the imitation of those persons he still consciously admired. Would a society of such individuals survive or perish?

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[1] For reasons that are still obscure.

[2] Therefore one should display the morals one desires others to possess.

THE NEUROTIC AND THE PERVERT.

When a psycho-analyst speaks of a normal individual he does not mean an average person, but a person whose inhibitions have been as far as possible removed. Thus the normal man is really the super-man. It is this deity whose morals we wish to determine. We may commence by fixing the characters that he does not possess; but which are conspicuous in his rival claimants to the earth—the neurotic and the pervert.

Both neurosis and perversion are due to unconscious inhibitions. That the super-ego is responsible for neurosis is fairly clear; but it is not obvious that a perversion can be due to an excess of inhibition. A perversion, however, results from fixations at primitive stages of development; and such fixations result from an inhibition of the stage that would otherwise have been reached.

Psycho-analysts divide sexual development into three stages—the oral, the anal, and the genital—which are again subdivided. The normal individual alone has reached the final stage. Both the pervert and the neurotic are fixed at a more primitive level.

The pervert differs from the neurotic in that some of his pre-genital sexuality is expressed almost in its original form. His eroticism is oral or anal rather than genital. His affections may be expressed sadistically or masochistically rather than as love. But the neurotic is repressed at the pre-genital as well as at the genital level. He must therefore disguise his sexuality as painful symptoms before he can relieve it.

Distinct from, but similar to, the pervert or the neurotic is the individual with the pervert or neurotic character. He has no gross abnormalities or symptoms; but his character is composed of near derivatives of these. Like the pervert and the neurotic his sexuality has not reached the final genital stage. It is partially inhibited at this level. Like the pervert and the neurotic his sexuality is fixed, at least partially, at the oral or the anal, or at most an early form of the genital, stage. But unlike the pervert he is not conscious of his fixation; and unlike the neurotic he does not express it in symptoms distressing to himself. Instead he expresses it in character traits that are distressing to others, or useless to himself.

Corresponding to the neurotic and the pervert, pre-genital characters fall roughly into two types—the incompetent and criminal. The repressions of the criminal will only permit him to function anti-socially. Those of the incompetent prevent him from functioning at all. Neither are fully capable of developed love, nor of the social derivatives of this impulse.

The characteristics of neurotic and incompetent, or of pervert and criminal, can be classified according to the fixations that can occur. There are sucking oral types who prey upon their fellows or expect to be breast fed by the state. There are biting oral types who are sadistically avaricious, or who, reacting against such tendencies in themselves, are over-ready to discover it in others. There are productive anal types well suited to a capitalist society and repressed productives who regard wealth as vile. There are retentive anal types who are ungenerous, or who, reacting against their unconscious inclinations, are excessively conscientious, systematic and precise. And lastly, there are the phallic types of the first genital phase whose genital eroticism is developed, but who are still narcissistic and inadequately capable of a full object love.

THE NORMAL.

The normal individual is so rare that his traits are less easy to describe. He will not be as arrogant as Nietzsche's super-man; for a limitless contempt of others is incompatible with a developed object love. Nor will he be a medieval Christ; for the meek have repressed the masculine component in this love. He will not be a Shavian ancient, a dementia praecox in the restitution phase, clear-headed but emotionless, capable of apprehending only the form of experience without its content.

Merejskowski's emperor Julian came nearer the concept of the normal when he dreamed of the Hellenic gods, not as they had been, but as they would become. After the neurotic Christendom of the dark ages had passed away Greek art would be rediscovered, and man would perfect the work that he had so long laid aside. The asceticism that refused to wash lest it should be led into temptation, or to think lest it should be excited to revolt, could not last for ever. Joy, beauty, and learning would return. They would even be disembarrassed from the last impurities of folly.

Perhaps Mr Wells envisages a similar ideal when he pictures a race of nude philosophers who punctuate their contemplations with free and amorous adventures.

Psycho-analytic theory provides a definite base for such speculations. The normal man will be without genital inhibitions, he will enjoy an adequate sex life. He will not be fixed at a pre-genital level. He will not be unduly narcissistic. He will be capable of full object love.

The man who is capable of object love will have outgrown former stages. He will have outgrown his egotism, his ungenerosity, his dirtiness, his covetousness, and his parasitism[1]. But such characteristics of early stages of libidinal development he will not have repressed; he will have exchanged them for qualities that give him greater pleasure. Thus he will not possess the typical reactions that arise when early stages are repressed rather than outgrown. He will not be meek, nor gushing, nor fastidious, nor aggressively self-denying or independent. He will be neither pervert, nor neurotic.

But the normal man will retain some inhibitions—those based on rational fears and on the introjection of persons he still consciously admires. Since he will have outgrown his narcissism, those founded on personal fears will be unimportant[2]. But he will retain unweakened those based on introjections that he consciously approves. I believe that such restraints, acting upon normal individuals, would be sufficient to protect a culture which had already been evolved, and to secure those sublimations necessary to its further growth.

Therefore a society of normal individuals would probably be stable, and would almost certainly be pleasant. None would menace unduly the interests of his neighbours, and each would be able to protect his own. Laws would be unnecessary to curb the criminal or bolster the incompetent. And if there was a government at all, it would not greatly matter from which section of the community it was selected; since there would be no perverts to exploit, nor neurotics to mismanage, the public affairs. Is such a society likely to arrive; or is it a Utopian dream?

EDUCATION.

The normal individual, as here defined, is rare to-day. The usual types are pervert or neurotic, criminal or incompetent. But, if the theory of psycho-analysis is correct, the normal could be produced by breeding and education.

It is recognized that the factor of inheritance helps to condition the development of abnormalities. But it is at present impossible to isolate this factor. A blue-eyed child possesses this character because he has inherited it from his parents; not because he has been brought up in the shadow of their example. But if a child resembles his parents in their neuroses, or in their perversions, we do not know how far he has inherited, and how far he has caught, these defects[3]. That is, we do not know how to apportion the responsibility for psychical abnormalities between inheritance and environment. The inherited disposition may be so strong that almost any environment would bring it out, or so weak that only exceptional circumstances could do so. The strength of the original disposition we cannot measure; but by analysis we can discover the events that developed it. Similarly, in studying the conditions of normality we must for the present neglect the eugenic factor and concentrate on the factor of education.

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[1] Corresponding respectively to the narcissistic, the second and first anal, and second and first oral stages.

[2] For, as Freud has shown, men can be physically afraid only when they love themselves.

[3] Except in cases where the abnormality is due to gross physical defects.

Education in the full sense of the word conveys knowledge of two kinds—knowledge of the world and knowledge of the self[1]. And corresponding to these two types of knowledge are two types of education —enlightenment and psycho-analysis. Enlightenment removes only those inhibitions that are based on conscious ignorance and superstition. But psycho-analysis eliminates those that are unconscious and whose very existence has only recently been discovered.

The genital inhibitions that distinguish the pervert from the normal are unconscious; so are the additional pre-genital inhibitions that distinguish the neurotic from the pervert. Therefore enlightenment alone cannot make a neurotic into a pervert or a pervert into a normal.

But inhibitions based on fears which are both conscious and irrational can be removed by enlightenment. If a man is already otherwise normal, enlightenment will not release anti-social impulses; for such impulses will have been outgrown. If he is already incompetent or neurotic it will not cure him, nor will it make him pervert; though it may make him more neurotic by removing the hope of a Paradise in which what he has missed in this life will be enjoyed in the next. If, however, he is already criminal or pervert, and restrained only by the fear of hell, enlightenment will make him a menace to his fellows. Therefore those philosophers who have feared to educate the masses had grounds for their misgivings; for by education they understood enlightenment alone.

Before Freud it was possible to remove only those inhibitions that were founded upon ignorance and superstition; not those that were unconscious. But psycho-analysis can eliminate repression and convert the neurotic and the pervert into the normal. And, if the conclusions of this paper are correct, the normal is an asset and cannot be a menace to society. Therefore the world has nothing to fear and much to hope from analysis. Can it justify this hope?

It must be admitted that psycho-analysis is tedious and costly; that it requires a high degree of intelligence both in the doctor and in his patient; and that even when these conditions are fulfilled it does not always produce super-men. Nor is it very effective with the pure pervert who has no strong incentive to alter his condition. But the pervert is generally also a neurotic, and analysis does cure neurosis. And even when the cure is incomplete, it starts a development that continues of its own accord. Thus analysis, even under present conditions, will raise the efficiency of many and create some super-men.

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[1] Roughly speaking, knowledge of sensations and knowledge of ideas.

But there is no reason why analysis should always be confined to the re-education of those who have already gone astray. A start has been made with the analysis of children, and with the study of ways of preventing the development of those inhibitions that would otherwise distort the normal growth. If these problems are solved, all problems of sociology and ethics will solve themselves, and a society of super-men will rule the earth.

Thus, while enlightenment alone is dangerous, analysis alone is beneficial, and the combination of the two is even better. Will enlightenment destroy society before analysis has had time to save it?

MENTAL DEFICIENCY AND MALADJUSTMENT.

By HENRY HARRIS.

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II. *Mental deficiency in the light of that concept* (pp. 286–287).
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    Biological determinants of intelligence.
    The five groups of factors: hereditary, blastophoric, congenital, natal, and acquired.
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IV. *Psychological considerations* (pp. 295–299).
    (*a*) *Intelligence: its nature and estimation.*
    (*b*) *Intelligence: its significance in mental deficiency. The 'reservoir of subnormality' on which ferments of psychopathy and harmful social suggestion act, to produce a variable incidence of mental deficiency.*
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V. *Social considerations* (pp. 300–310).
    (*a*) *Social contributory causes of mental defect.*
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I. A CONCEPT OF MALADJUSTMENT.

It is convenient to consider the adaptive process in man from three aspects: the biological, the psychological, and the social; and to think of maladjustment as occurring—predominantly—at one or other of these levels. Be it stressed, however, that each level may be implicated and is probably so; that the division into levels or aspects is purely methodological, and that all three aspects are ultimately biological.

A possibly useful concept is that of 'adaptive man' in relation to each of these levels.

Biologically, man may be considered as a 'progenitor,' a collection of genes, a medium for the transmission of human qualities down through time.

Psychologically, man may be considered as an 'individual' with psychological and other adjustments and problems that are essentially personal.

Socially, man may be considered as a 'person' in the sense suggested by Burgess: that is to say, as an individual—not in a social vacuum—but with a social status, a member of social groups: in short, man considered as a social being. Further sociological subdivisions of this group might be made: man, for instance, considered as a 'partner' or 'mate,' as a 'parent,' and so on.

Using this concept as a criterion, a man may be said to be successfully adapted when he is the parent of good stock, has achieved complete and adequate self-expression, has contributed to the community in accordance with his capacity and has thus completed a trinity of harmonious achievement.

II. MENTAL DEFICIENCY IN THE LIGHT OF THAT CONCEPT.

Mental deficiency is—like most maladjustments—a function (in the mathematical sense) of biological, psychological and social factors: or, roughly speaking, of factors whose ultimate expression may be considered here in terms of intelligence, personality and social achievement. Of which, in this case, the first are the primary factors, the other two, secondary contributory factors.

Etiology of Mental Deficiency.

To express it mnemonically, *mental deficiency is a function of* $B \pm P \pm S$, *of which in the individual,* B *is a constant,* P *and* S *variables.* Where the defect in B is sufficiently great, as in idiots and imbeciles, that in itself constitutes maladjustment: or rather a complete failure even to attempt adjustment. Where the defect in B is less, as in the larger group of high-grade subnormals, maladjustment does not, of necessity, arise without the intervention of either or both groups of secondary factors: psychological factors such as emotional imbalance and psychopathy, or social factors such as inadequate or unsuitable training, unfavourable environment, unreasonable exposure to temptation and so on.

The Secondary Factors.

Indeed, as will be seen, *it is the presence of secondary factors that determines in such cases whether a given individual will ultimately be classifiable as subnormal or as legally defective, that is to say, as an adjusted or maladjusted individual.*

Such a formula reminds us, at any rate, of two fundamental facts: firstly, that the immediate treatment of deficiency resolves itself into the modification of the variables P and S by appropriate training, environment and supervision; secondly, that the ultimate solution of the problem rests on the modification or elimination of the constant B.

A Criterion of Mental Deficiency.

Such a formulation of causal factors might be expected to suggest a criterion or definition of mental deficiency; presumably a threefold one. Biological causes which might help most to make such a definition explicit are too numerous and too little understood to be of use otherwise than in their ultimate expression as intelligence, of which a rough quantitative estimate may be made. A psychological criterion in terms of inadequacy of personality is desirable but not yet practicable.

Mental deficiency, being a lack of adaptability due primarily to intelligence defect, is perhaps most practically defined in terms of *subnormal intelligence*—due to innate or early acquired causes and *not exceeding a fixed quantitative level—combined with inadequate social behaviour or performance.* Social inadequacy in the young is conveniently considered in educational terms; in the adult, in economic and industrial terms.

Such a definition distinguishes the defective, on the one hand from the mentally subnormal who are socially quite adequate; on the other hand from the socially inadequate, who are either normal, abnormal or only slightly subnormal. It incidentally excludes the so-called 'moral imbecile.'

Medically, the problems of the subnormal and the defective are directly continuous: socially and legally, they are not so. The difficulty of a fixed quantitative level or maximum mental age is great and will be considered later.

III. BIOLOGICAL CONSIDERATIONS.

The biological factors that determine and modify intelligence may be grouped as follows:

A. Plasmic factors—acting on the germ-plasm before cell-conjunction.
   1. True heredity, Mendelian or otherwise, determining germ-plasm 'quality.'
   2. Blastophoria, or environmental vitiation of parental germ-plasm, determining germ-plasm 'condition.' An egg, for example, may be of good intrinsic 'quality,' but in bad 'condition.'

B. Somatic factors—acting on the soma after cell-conjunction.
  3. Congenital factors—operating between cell-conjunction and birth.
  4. Natal factors.
  5. Acquired factors.

The relative significance of these factors has yet to be evaluated; especially of the two rival—but by no means mutually exclusive—plasmic possibilities, true heredity and blastophoria.

Heredity.

Goddard, Davenport and others endeavoured to prove that mental defect—when not due to obvious accident or disease—is inherited in a Mendelian manner, as a recessive unit. The marriage of two morons was found to produce less than 80 per cent. of defective children, instead of the expected 100 per cent.: to account for this, it was suggested that two or more recessive units were necessary. Heron, Pearson and later Myerson have vigorously denied the validity of the biometrical technique employed. Further work has failed either to confirm or rebut their results; and one can only conclude that heredity, Mendelian or otherwise, has not yet been proved responsible for mental defect. That it plays a part, however, seems strongly probable.

Blastophoria.

Many workers hold that the germ-plasm may be affected by noxious agencies—such as alcohol, lead and disease toxins—while still in the parental body, causing a deterioration which may affect one or more generations, but which may disappear under favourable environmental conditions. Work strongly suggesting this has been done by Stockard, Guyer and Smith, and others: a similar process has been named 'induction' by the Mendelians, and on a clinical basis, Tredgold, Myerson and Wallin support such a theory.

Such a process, acting on the germ-plasm—and more especially on its nervous component, as Stockard's work seems to show—might well produce a simple uncomplicated mental defect, and is worthy of further investigation. Tredgold, however, also attributes to it a diversity of conditions such as mongolism, microcephaly, epilepsy, paralysis, hydrocephalus, porencephalus, sclerosis and deaf-mutism. For most of these it seems more reasonable to look, in the first instance, for factors—possibly the same factors—acting on the foetus rather than on the germ-plasm.

Clinically we find that defectives of the lowest grade—including mongols, microcephalics and paralytics—occur, as often as not, in perfectly healthy stock: whereas it is the high-grade who have, as a rule, a bad family history. The solitary incidence of low-grade cases would suggest a congenital or subsequent factor. High-grade cases are more likely due to heredity or blastophoria. A blastophoric factor might cause a lateral incidence of mental defect, that is to say, in members of the same family, as might also a congenital factor acting continuously on the mother. Such an incidence would simulate a Mendelian distribution.

Generally speaking, on the basis of whatever evidence is available, clinical or otherwise, it would seem that the uncomplicated high-grade cases, constituting the majority of defectives, are due to plasmic factors, hereditary or blastophoric, or both: and that the low-grade complicated cases are due to somatic factors. At the moment we cannot separate the plasmic factors at work, and one is inclined to group them and to regard defectives of such type as directly continuous with individuals of normal and supernormal intelligence, who might be considered as a product of similar factors. In short, defectives of plasmic origin might be regarded as differing only quantitatively from the normal, but qualitatively from those due to somatic causes.

A statistical illustration of this point may be made in the attempt to apply the Gaussian probability curve or normal frequency curve to the distribution of intelligence. According to Terman, if the incidence of intelligence of the population—in terms of Intelligence Quotient—is plotted out, it approximates, like stature, to the normal frequency curve. This bell-shaped, symmetrical, smooth curve of frequencies indicates a certain 'modal' I.Q. which is most frequent: greater deviations from this mode have lesser frequencies, until at either extreme of the curve we have degrees of high and low intelligence which are comparatively rare.

Pearson, however, in earlier work, showed that actually the distribution curve of intelligence had a long 'tail' on the subnormal side, and a shorter one on the supernormal side, and was indeed a Gaussian curve with something tacked on in front. This something might well represent the somatic factors in the causation of defect, as distinct from the plasmic factors which we might hold to be represented in the 'tail' of the Gaussian curve itself.

To fit organic idiocy into such a distribution curve of intelligence is like the inclusion of legless men in a frequency curve of statures: a place will be found for them next the dwarfs, but the comparison is illegitimate and not illuminating. Defect of somatic origin is more profitably regarded as a qualitative disorder of the normal, rather than as a quantitative variation of it.

According to Hollingworth, the peak or mode of the normal frequency curve for intelligence tends to skew towards the lower end, which seems to indicate the presence, in everyday life, of factors—blastophoric or otherwise—tending to reduce potential intelligence.

As to the nature of the blastophoric and congenital factors causing mental defect, little is known: syphilis, tuberculosis, alcohol, even lead, are a few of many possibilities. And it is likely that the same factors which produce a blastophoric action on the germ-plasm are equally capable, later on, of a deteriorating action on the foetal soma, acting through the maternal organism.

Congenital Factors.

Congenital or intra-uterine causes of mental defect have been greatly neglected, perhaps because of their comparative inaccessibility. They produce either defective development or degeneration.

Development so defective as to result in a monster is more likely to be due to congenital causes than to blastophoria. Stockard believes that this is always so, and considers that the type of monster depends on the moment at which the developing embryo is interfered with. Similar congenital factors, acting with lesser intensity, are probably responsible for the more unusual structural defects, such as oxycephaly, microcephaly, possibly true porencephaly, though that, like false porencephaly, may also be of vascular origin. The comparative largeness and rapid development of the nervous component in the early embryo renders it especially prone to involvement in monster formation.

Mongolism—with its characteristic stigmata, its resemblance to the endocrinopathies, its usual occurrence in comparatively healthy stock—seems more reasonably accounted for by congenital than by blastophoric factors. These would probably act through the endocrines in the early months of foetal life and—to follow Stockard's line of thought—are probably dependent on the moment at which interference with the foetus takes place, rather than on the nature of the interfering factor, which may vary.

Cretinism is mentioned by Crew as a recessive Mendelian character, but its occurrence in the children of goitrous mothers suggests a common factor acting on the mother and foetus: that is to say, a congenital factor acting on the foetus through the mother.

Davenport and Weeks, in proving to their own satisfaction that epilepsy is inherited in a Mendelian manner, have committed the usual Mendelian error of treating a clinical symptom or syndrome as if it were a biological unit. The organic and 'idiopathic' epilepsies—both associated with mental defect—are obviously different diseases: nor is there any evidence to prove that the 'idiopathic' epilepsies in themselves constitute one definite disease. Thom found a comparatively slight vertical transmission of the epileptic syndrome. Myerson found very little lateral incidence in members of the same family. Brain, still later, came to the conclusion that 28 per cent. of his cases had inherited a predisposition to epilepsy, but did not believe that we had sufficient data to consider the matter in relation to Mendelian inheritance.

According to Ford, 2 to 3 per cent. of all epilepsies are due to birth injury: Tredgold believes that 1·5 per cent. of defectives owe their condition to birth injury and these are invariably epileptic. Following birth injury, we may get epilepsy without defect, but not mental defect without epilepsy. Of the other epilepsies associated with mental defect, probably most are due to a variety of unknown and unclassified congenital factors: though blastophoric and hereditary factors are not ruled out. How these factors produce epilepsy: the nature of the epileptic mechanism, whether it be decerebrative or cortically facilitated: why epilepsy should conduce to mental defect or be associated with it; all these are problems as yet unsolved.

The sclerotic amentias are of obscure origin and probably congenital; Freeman considers the tuberose variety to be due to congenital factors acting between the fourth and seventh month of foetal life.

The cerebral diplegia group is a bone of contention. Freud, Collier, Ford and others refute the original emphasis on birth injury and prematurity as a cause; Collier suggests an unknown congenital factor causing a primary neuronic degeneration which results in an atrophic lobar sclerosis of the cortex. Collier and Ford tend to associate microcephaly with this group; and Collier also suggests a relationship with the familial idiocies of post-natal onset, with Schilder's disease and with the familial and hereditary myopathies, Friedreich's disease and such-like.

Ford contrasts the so-called 'diplegias' with the birth-palsies. The latter are said to be either mono- or hemi-plegias or even double hemiplegias: in the hemiplegics the arm is said to be most affected, in the 'diplegics' the leg. The distinction between a diplegia and a double hemiplegia seems over-subtle.

On the other hand, Sachs, Adie, Kinnier Wilson and others prefer to think in terms of a diplegic syndrome which may result from a variety of factors, congenital, natal or acquired, and may be associated with diseases and defects of totally different pathology.

Thus Adie argues that a distinction must be made between the comparatively common congenital and natal diplegias with their tendency to improve and the rarer post-natal familial and non-familial diseases which may have diplegic symptoms but which steadily progress to death. The essential difference between these two types is an argument against the former being a primary neuronic degeneration like the latter. A lesser argument is the non-familial nature of the former. Again, Schwartz's work seems to indicate that birth injury may cause an atrophic lobar sclerosis, apparently similar to that said to be due to a primary neuronic degeneration: in this case due to extravasation into the presenting part of the head which is the area of lowest pressure.

We do not seem justified in regarding the various diplegias—and with them the familial and hereditary myopathies and ataxias and such-like—as due to similar causes with similar pathology but affecting different parts of the nervous system. There is no adequate reason why we should regard cerebral diplegia as otherwise than a syndrome associated with different diseases of different pathology and due either to congenital, natal or acquired causal factors.

Associated with diplegia as a symptom, we may get hemi- or paraplegias, also choreic and athetoid disorders. Both Sachs and Williams find mental defect to be commoner in the diplegias than in the hemiplegias.

The causation of amaurotic family idiocy is still obscure: it may be hereditary, blastophoric or congenital in nature. Sachs, who is perhaps best qualified to speak on the matter, is unable to come to any conclusion.

Hydrocephalus has been most adequately studied by Dandy and Blackfan. Congenital causes are meningitis, more rarely failure of the interventricular foramina and the foramina of the fourth ventricle to develop. Acquired hydrocephalus is the result of meningitis. Natal hydrocephalus occurs rarely, if at all: Ford states that it may be due to plugging of the Sylvian aqueduct by an organized clot following intraventricular or subarachnoid haemorrhage. According to Fraser and Dott, it may follow any subtentorial haemorrhage.

For the most part, hydrocephalics are only slightly—if at all—subnormal. Like most paralytics, they are—as Williams has pointed out—abnormally fatiguable. This, in conjunction with any paralysis actually present, may interfere sufficiently with educational development to imulate, to the more casual observer, mental defect.

Natal Factors.

The natal causes of mental defect are: first, haemorrhage, which may be subdural, subarachnoid, supracortical, and possibly encapsulated, or intracerebral; secondly—and more rarely—direct cortical injury. Such cases have some degree of paralysis, usually spastic. A third or more are epileptic; it is these who are most likely to acquire defect and who constitute, according to Tredgold, about 1·5 per cent. of all defectives. According to Sachs, prolonged labour is a more potent cause of haemorrhage and injury than the use of instruments.

Acquired Factors.

Of acquired causes of mental defect, the commonest are the toxic-inflammatory processes causing meningitis and encephalitis. According to Burt, encephalitis lethargica occurring before the age of three causes idiocy or imbecility, between three and eight feeble-mindedness, between eight and twelve character changes of physiogenic type with some retardation. Dawson and Conn found that some degree of retardation occurred in all children who were affected, even in those who had the additional complications of Parkinsonism or character changes. The mental retardation, however, did not seem to be the cause of the character changes.

Physical defects and diseases such as enlarged tonsils and deafness, such conditions as innate word-blindness—common but seldom diagnosed, according to Wallin: these and similar conditions tend to mask intelligence, to reduce its effectiveness. But they cannot cause deficiency, nor can their treatment relieve it.

Social Implications of the Five Factors.

The social implications of these five sets of factors make it important that they should be evaluated as soon and as completely as possible.

Hereditary factors demand an eugenic solution, selective mating and a differential fertility in favour of the best types. Blastophoric and somatic factors demand an euthenic solution: preventive and constructive medicine, antenatal and otherwise, such as would be comprised in a nation-wide scheme of periodic prophylactic medical examination embracing all classes and all ages, and to be followed by appropriate treatment.

The former is the slower solution; hence the comparative pessimism of the eugenists and the optimism of the euthenists. Myerson has pointed out a general tendency in medicine to postulate an hereditary cause until a specific environmental one has been found, as was the case in tuberculosis. For that reason it seems wise to consider both methods of attack, with the emphasis perhaps on the latter.

Sterilization.

Sterilization has been suggested and even tried as a negative means of eugenic control. In defectives of somatic origin, if fertile, there seems no reason to expect defective stock, nor can we be sure that blastophoric defect is transmitted beyond the first generation. To say that mental defect is hereditary is scientifically premature: even if due to two or more recessive factors, as the Mendelians suggest, no one could possibly prophesy that a given individual or pair of individuals will inevitably have defective stock. One must also keep in mind the likelihood that there are genetic forces at work which tend to mend as well as to end inferior stock. Genetically, an adequate case for sterilization has not been made out.

That defectives are incapable of properly rearing children seems, however, a quite adequate social reason for denying them the right to procreate. Those who must be segregated require no further treatment. Those who can work in the community without supervision are not defectives, though they may be subnormal: we have obviously no right to sterilize them, however inferior they seem, and whatever our eugenic creed.

It is in regard to those who can work in the community with some supervision, but who are not fit to rear children, that the question arises. Difficulties of diagnosis and prognosis, our ignorance of the possible effect of newer methods of control and treatment complicate the matter endlessly, and it seems wiser to leave it as part of the general problem of supervision to prevent the propagation of such types.

There is no reason for believing that the average defective is otherwise than unaggressive sexually and that he will not usually respond to such supervision. Where he will not, it is likely that segregation will be indicated at any rate. A legal ban against the marriage of defectives who are under supervision, and against its abettors, and the threat of segregation should this ban be disregarded, would probably act as an additional buttress against the propagation of such types.

IV. PSYCHOLOGICAL CONSIDERATIONS.

Subnormal intelligence, as we have pointed out, is the expression of a biological defect. We will here discuss its nature, estimation, significance, and relationship to psychological factors.

(a) *Intelligence: its Nature and Estimation.*

If we are to measure intelligence, we must know something of its nature: roughly there are three types of theory. The *uni-modal* theory of intelligence suggests that there is but one kind of intelligence; a man who excels in one thing is likely to excel in another, and there will be a strong positive correlation between all his abilities. The *multi-modal* theory is related to the old 'faculty' psychology, not yet dead. It postulates groups of activities with strong positive correlations existing only between activities that belong to the same group; thus a man may have considerable mathematical intelligence but little literary intelligence. The *non-modal* theory suggests that every activity must be considered by itself, and that ability in one direction gives no indication whatsoever as to ability in another.

Spearman—who claims to have established psychology, for the first time, on a scientific basis—presents what is a modification of the uni-modal theory, or perhaps a synthesis of all three. He suggests that intelligence consists of at least two factors: firstly, a general factor g which enters—to a varying extent—into every activity, and is, possibly, a function of bodily energy; secondly, a specific factor s which is specific to every activity, and is possibly a function of body structure, particularly of the sensori-ideo-motor nervous system. Thus one aspect of intelligence is energic and presumably conative: to use a motoring analogy, it is like the petrol that drives the car. Another aspect is structural, more purely cognitive: to resume the analogy, it is like the component parts of the car, whose nature determines the specific type of performance. According to Spearman, g continues to develop, in its own way, until the age of fifteen or sixteen, is uninfluenced by education, but may be influenced by general bodily condition and development: whereas s develops more irregularly and is the educable component of intelligence. Spearman mentions another possible factor w (Webb), which corresponds to the driver of the car, a form of control or ultimate integration.

Spearman's g embodies the uni-modal theory, his s contains the non-modal theory. If one allows that within the infinite number of specific factors *s*, one may get groups of them—functioning through the same structures—to correlate strongly with one another, one has a synthesis of all three theories which may be useful.

One's attitude towards mental testing will obviously depend, or should depend, on one's conception of intelligence. The uni-modalists will put all their trust and effort in general tests; the multi-modalists, in special tests. The non-modalists will 'sample' or 'average' intelligence by using every kind of test. Most testmongers lack any theory of intelligence, but work for the pleasure of the thing. Spearman's theory suggests the use of general tests—in which specific factors will tend to cancel one another—along with specific tests for specific abilities; possibly tests for *w*. One might add tests for grouped specific factors.

The nature of special abilities and disabilities is still uncertain, and may be associated with such grouped specific factors. There is still to be settled, however, to what extent special abilities may merely mean special interests. Also to what extent certain special disabilities are due to pathological or semi-pathological conditions of uncertain origin such as word-blindness.

Such considerations remind us: firstly, that intelligence is not so much a faculty, as an aspect of mental activities—of conscious adaptation, with conative, cognitive, possibly affective components; secondly, that our tests of intelligence are as yet only approximative and must be ceaselessly checked, sharpened judiciously on the whetstone of correlation and improved. Again we must remember that no mental test that has not been checked by a psychiatric examination is completely reliable.

If these considerations are kept in mind, one may still, in good conscience, pay some attention to conclusions derived from extensive mental testing.

(*b*) *Intelligence: its Significance in Mental Deficiency.*

Undoubtedly the largest and most important psychological experiment was the testing of a million and a half American soldiers; this led to startling conclusions.

Goddard, one of the first to test on a large scale, had tentatively formulated the mental age of idiots as anything under three, of imbeciles from three to seven, of morons from eight to twelve. The army results—derived from group tests which had been carefully correlated with individual tests—revealed that 47 per cent. of the white draft and 89 per cent. of the coloured had a mental age of twelve or less. Even if one accepts Wallin's maximum mental age of nine or ten as a criterion of mental detect—which Wallin himself considers as possibly too high—18 per cent. of the white draft had a mental age of ten or less, 10 per cent. an age of nine or less, 5 per cent. a mental age under nine. The number tested excluded those too low-grade to enlist and some of the higher ranks, and does not underrate American intelligence by much, if at all: nor is it likely that average intelligence elsewhere is much higher.

A criterion of deficiency which embraces nearly half the population must be wrong. Even a maximum mental age of nine gives too large a proportion. If mental age is to help in the determination of deficiency, we must either lower the delimiting age still further, or we must allow that mental defect may be constituted by subnormality plus certain secondary factors.

In the first instance, our delimiting mental age would be such, that even with the maximum social experience and wisdom possible for such an intelligence, adjustment would be impossible. This seems only practicable with the lower grades—the idiots and the imbeciles.

In the second instance, we would still have to lower our delimiting age considerably, but we would have a larger range of intelligence upon which secondary factors might act. This range would constitute a *reservoir of subnormality* on which ferments of psychopathy and social suggestion might act to produce an incidence of mental defect.

Mental defect would then be a variable quantity drawn from a larger number of subnormals—from a reservoir of subnormality—by the action of secondary factors. Thus if we lowered the age provisionally to nine, we might then have 10 per cent. of subnormals in the population as a reservoir, of which one in four or five would be unable to adjust, some through extreme lack of intelligence, most through the action of secondary factors.

Variability in the actual incidence of mental defect would depend on the additional psychological and social factors. Such an incidence might be considered as an index of the quality of a society or community. The more highly socialized the community, the uncommoner such factors, and the nearer the incidence of mental defect to the irreducible minimum due to biological factors.

Subnormals above the delimiting mental age, who were unable to adjust, would be regarded and treated as psychopaths, if the contributory causes of maladjustment were psychological: as delinquents, dependents or such like, if the contributory causes were social, but certainly not as defectives. Though the problems of the defective and the subnormal are directly continuous medically, it would be an abuse of present legislative and educational arrangements in favour of the defective to burden them with such types.

(c) *The Relationship of Subnormal Intelligence to Psychopathy.*

Now to consider the psychological factors that may complicate subnormality and help to determine deficiency.

As such the psychoses and psychoneuroses are comparatively unimportant: of greater significance are anomalies of temperament and character. Such anomalies are difficult of assessment, for the quantitative estimation of temperament—unlike that of intelligence—is, as yet, not even in its infancy. There is great need of a rating of character and temperament, which if not quantitative, will, at any rate, afford a basis for comparison.

One mode of approach is to consider the individual in terms of prepsychotic personality, in terms of the reaction-types of Kretschmer, Bleuler, Wertheimer and Hesketh and others. Exaggerated degrees of such reaction-types would show cyclothymic instability, schizophrenic apathy or paranoid aggressiveness and social inadaptability, and would be sufficient to convert a borderline subnormal into a defective. Such a concept, though speculative, is useful: however, as Gillespie points out, it indicates, not so much the quantitative aspect of the emotional factors concerned, as the manner in which these are related to the rest of the personality. Moreover, it has a drawback common to every classification of mankind into types: that types represent extremes, whereas most individuals are intermediate, just as most men are neither short nor tall, but of medium height.

Another mode of approach—corresponding to the psychobiological viewpoint of Adolf Meyer—is to consider temperament and character as adaptive functions and to define temperamental traits in purely situational terms: in terms of reactions to specific situations. Burt, for instance, uses the Macdougallian instincts which constitute no more than an empirical list of such reactions. Such a method rates the individual in traits like pugnacity, capacity for affection, suggestibility and so on. There is even a remote possibility that statistical norms might be established from which a quantitative estimation of traits could be made. Unlike the first mode of approach it considers the individual in terms of normal reaction rather than in terms of abnormal type, and despite its empiricism seems to be the most useful method at the moment. Anomalies of temperament and character may then be regarded as disturbances of trait distribution, in which there is an exaggeration either of individual traits or of a disharmony between them. Such disturbances of trait distribution might well determine deficiency in a subnormal individual; and are most probably due to an interaction between social factors in the environment and increased suggestibility in the subnormal individual. Why the subnormal should be more suggestible is discussed later in the section on social contributory causes of mental deficiency.

Whatever method of estimating temperament we adopt, it is obvious that temperamental anomalies or psychopathy may occur at every level of intelligence. For practical purposes one must draw a line below which subnormality complicated by psychopathy is allowed to constitute defect. To talk of 'moral imbecility' in the case of a psychopath of normal or supernormal intelligence, is to stretch the term 'mental deficiency' until it ceases to have any significance. Such individuals are rarely 'moral' and never 'imbecile': moreover morality is no psychiatric concept, even if the lawyers are prepared to accept it as a legal term.

In the case of the most troublesome of all maladjusted individuals, the psychopaths who are only slightly subnormal, one might term them 'unstable subnormals' or even use the American term 'constitutional psychopathic inferiority', but they are not defectives, and should not be treated or segregated with defectives.

To conclude the section, we may parenthetically consider the relationship of subnormality to the psychoses and psychoneuroses.

Subnormals, like the supernormals, seem especially prone to maladjustment under present conditions: both are deviates from the average, both live in a medium favouring the average, yet both must adapt themselves to it. If compelled to compete with normal individuals, the subnormal is more likely to develop a psychosis: if trained and treated differentially, however, if allowed to do work—of agricultural or routine factory type—to which he is adequate, he may show more stability than a normal individual at a similar monotonous task. Probably most of the drudgery that is indispensable to our slightly civilized world is done by subnormals of stable type, who contribute with brawn what they cannot contribute with brain.

What we have said in the last paragraph applies perhaps more to those who are only moderately subnormal. In these, psychoneuroses are fairly common in the form of an anxiety neurosis or hysteria following upon a feeling of inadequacy. Feelings of inferiority are especially common in subnormals and may cause disorders of behaviour and anomalous social attitudes resulting, even, in permanent maladjustment.

V. SOCIAL CONSIDERATIONS.

Under this heading we propose to discuss: first, the social contributory factors determining mental defect; secondly, mental defect as a cause of social maladjustments; thirdly, social methods of treating and controlling mental defect.

(a) *Social Contributory Causes of Mental Defect.*

Social factors determining mental defect are either of omission or of commission or—as an extension of the latter—due to the social demands made of the individual.

The cardinal sin of omission is failure to give the subnormal a differential training: not more training, or more elaborate training, but more suitable training; in the first instance, in order to develop the greatest wisdom and social capacity possible for his particular level of intelligence; in the second instance, in order to avoid a sense of failure. The subnormal, because of his handicap, finds adjustment difficult and is liable to failure. The retarding effect of a sense of failure has been pointed out by Burnham: and in an initially inferior individual it may too easily begin a vicious circle which may leave him permanently maladjusted. In the home—the first training-ground for the socializing of instinctive tendencies—he will require special coaching, if he is to acquire normal social habits. In the school, he will require a differential education, if he is not to be discouraged, thwarted, and provoked into perverse social reactions. He will require special vocational training to fully exploit whatever abilities—manual or otherwise—he may have.

Sins of commission are those exposing the subnormal to environmental conditions that tend to exaggerate individual traits or a disharmony between them: that tend—in short—to induce some kind of psychopathy. Such environmental conditions most probably act through increased suggestibility.

Suggestibility may be roughly defined, for present purposes, as the tendency of emotions—instinctive or otherwise—to realize themselves in action: to induce acceptance of ideas and stimuli that favour such action, and inhibition of those that do not. Such a tendency will depend, among other things, on the strength of the emotion, the strength and frequency of the effective stimuli, and the strength of the inhibiting and integrating powers—possibly related to Webb's *w* factor, mentioned by Spearman. In the subnormal, emotional tendencies are little, if at all, weaker; effective stimuli are certainly not stronger or more frequent, but inhibition is comparatively poor. Consequently, exposure to conditions unduly stimulating these emotional tendencies will result in their exaggeration. Such traits as acquisitiveness, pugnacity, sex desire and such-like may—under the influence of a bad home environment, bad companions, inadequate occupation or inadequate recreation—graduate into stealing, quarrelsomeness, sex offences, inveterate nomadism or persistent cruelty. Street-sellers, barmen, waitresses and those in similar occupations are exposed continuously to antisocial suggestions which may be accepted by subnormal individuals to the detriment of their social adaptive powers.

Mental defect is also, to some extent, relative to the social demands made of the individual, which tend to increase with the complexity of civilization. Rural life makes fewest demands and many subnormals will sustain an independent life as agricultural labourers, who would inevitably become dependent defectives under the stress of city life.

Sex, too, modifies social demands. According to Hollingworth, a woman whose mental age is six has a survival-value in the community equal to that of a man whose mental age is ten or eleven. The man, being freer, is more likely to involve himself in conflict: the woman, having traditional house duties to fall back on, is free to adopt a tempo, less searching of mental weakness. Subnormal girls marry much more easily than men of corresponding intelligence: and a feeble mind in an attractive body will pass muster in a woman. To this, however, must be countered a latter-day tendency to regard unmarried motherhood in an unintellectual girl as indicative of deficiency.

(*b*) *Mental Deficiency as a Cause of Social Maladjustments.*

Mental deficiency as a cause of social maladjustment has been greatly overestimated. In America, the psychological criterion of deficiency generally adopted—a mental age up to twelve—has been so wide as to include nearly half of the population, if pursued to its logical issue. In which case, social inadequacy will, of itself, almost automatically constitute deficiency, seeing that the majority of these inadequates are likely to be below rather than above an average mental age found to be approximately thirteen. This accounts for the impossibly large percentages of delinquents, vagrants, prostitutes and such-like—ranging up to 90 per cent. or more—who have been diagnosed as feebleminded.

Though the significance of mental defect has been overestimated—as that of psychopathy is being now—there can be little doubt of its importance as a factor in social maladjustment: the more so, if one considers with it the entire problem of subnormality.

In the educational sphere, there are two grades of subnormals who are educationally maladjusted. There are the definitely defective—constituting ½ to 2 per cent. of the school population—on whom an ordinary education is wasted. At least another 10 per cent. of the school population, according to Burt, are sufficiently subnormal to require a modification of the ordinary curriculum: it is these who provide the worst disciplinary problems. Both types, if not specially considered, tend to block the whole system of elementary education and hold up the progress of the more normal children. They are a burden to their teachers, are often unhappy themselves and are likely to carry their maladjustments into other social spheres and become a further charge to the community.

In the social sphere, mental deficiency is a factor—a negative, predisposing factor—in such problems as delinquency, prostitution, illegitimacy and vagrancy.

Juvenile delinquency in subnormals always involves secondary factors, psychopathic or otherwise. Often it is the reaction to a sense of inferiority resulting from an unsuitable curriculum or inadequate training, and may be determined similarly to a psychoneurotic symptom: indeed may be no more than an antisocial symptom. Burt finds that delinquent defectives, in terms of mental age, average one-half a year higher than the non-delinquent defectives, and estimates that 8 per cent. of juvenile delinquents have an I.Q. of 70 or less. Both he and Miriam van Waters point out however that delinquency is commoner and more troublesome in subnormals whose I.Q. lies between 80 and 90.

The trend of modern criminology is—naturally enough—to regard the problem of adult crime as directly continuous with that of juvenile delinquency, and to follow up, in longitudinal section, such factors as subnormality and psychopathy. At a conservative estimate between 10 and 20 per cent. of adult criminals are markedly subnormal: of these, however, only a small proportion are definitely defective. Subnormals and defectives are said to form the backbone of the recidivist class. Murchison finds, however, that—under American conditions, at any rate—recidivists rate higher in intelligence than first offenders for most offences. Indeed Murchison's work—as well as that of others—suggests that delinquency correlates more closely with educational backwardness than with mental subnormality. Crimes committed by subnormals bear the hall-mark of their stupidity: they do not forge or embezzle but express themselves criminally in vagrancy, violence, violation and such-like.

Prostitution is a problem inevitable in every social system so far constituted, since none has yet existed in which expressive tendencies have prevailed over the repressive and prohibitive. There has always been a demand, a *vis a fronte*, and a supply of prostitutes would be forthcoming were there no feebleminded girls in the world. The *vis a tergo* determining the supply is compounded of innumerable factors. There is the economic push, affecting all levels of intelligence, but perhaps more especially the subnormals. Another factor is subnormality itself, acting partly through economic and industrial incapacity, partly through increased suggestibility and lack of social wisdom.

It has been said that woman has but one livelihood—through her body, which she may sell, for an indefinite period—as in marriage, or on short lease—as in prostitution. This may not apply to the modern emancipated woman, but it does to the woman who will not use her mind—and the feebleminded. The feebleminded girl has more inducement to fall back on her physical attractions, if any, and is moreover less capable of resisting the natural importunities of man. Psychopathic and other factors also play their part, equally in the normal and subnormal girl. A subnormal is not likely to make an efficient prostitute, a defective still less so, and they are both likely to remain on the exploited fringe of the profession. Subnormality is only one of many factors responsible for the supply of prostitutes; perhaps, on the whole, prostitution complicates the problem of deficiency more than deficiency influences the problem of prostitution.

Unmarried motherhood, like prostitution, would still exist were there no feebleminded in the world. Nevertheless, the incapacity of feebleminded mothers to rear their children properly makes the matter an important social issue.

Vagrancy is another social problem in which subnormality may play a part. The habitual tramp or hobo, when he does not owe his condition to purely economic conditions, is likely, if young, to be subnormal, a mild and aborted schizophrenic, or of psychopathic personality: if elderly, to be suffering from an alcoholic or senile deterioration possibly on a basis of subnormality. Occasionally he is the true philosopher.

Alcoholism is another problem which may involve itself in a vicious circle with subnormality.

In the economic sphere, dependency, pauperism, and chronic industrial inadequacy are all problems in which subnormality may play a part. How great or how small a part will be better known when a scientific vocational psychology has been used and has had time to accumulate its own case-records.

(*c*) *Social methods of Treatment and Control.*

Social methods of treating and controlling mental defect have as their aim: firstly, to control, as far as is possible, the biological determinants of subnormal intelligence; secondly, to socialize as many subnormals as possible, so that they may become completely or partially self-supporting, or at any rate not an active source of trouble to the community. A third aim is to control the environment, to avoid features which tend to induce character anomalies or precipitate antisocial reactions, to find a suitable niche in the community for those who can be trusted in it, to regulate social demands on them, and if necessary, to exercise some degree of permanent supervision. In the fourth and last instance, those who cannot be socialized or supported in the community must be segregated.

Control of the biological determinants of subnormality by social procedures has been superficially discussed in the section on biological considerations. In the present state of our knowledge, little more can be said. The general stock must be improved euthenically, the obviously unfit must be discouraged from procreation and the supernormals encouraged. Differential fertility in favour of the best types will perhaps never be practical politics until the erotic and procreative functions of sex life have been dissociated; so that those who are to be dissuaded from the latter may be allowed to console themselves with the former, with the full stamp of public approval.

With regard to the socializing process which is our second aim: *home life*—because of its relation to early habit-formation—is the first important factor. A good home—either his own or that of a guardian—is of great importance in the prognosis of a subnormal who has graduated from an institution into the community. That, and the regularity of his job are the two social factors which offer the most hopeful prognosis.

Next to the home, the greatest burden of socializing the subnormal must fall on the *school*: if only for the reason that the subnormals—including that 'reservoir of subnormality' from which the defectives are drawn—form too large a proportion of the population to be institutionalized.

To shoulder such a burden—that of educating and socializing the subnormal as well as the supernormal deviate—the school must adopt, paradoxically enough, more individual methods, a more differential education. It must individualize in order to socialize. It must be prepared to alter the curriculum, method of teaching, and rate of learning to suit the different levels and types of intelligence, and, as far as is possible, the different types of personality.

Differential education means, not more education, but more suitable education. As the idea is ultimately derivative—via Montessori and others—from the study of the feebleminded, it is only fair that some of the profit therefrom should accrue to them.

Another justification for differential education is the growing realization that competition is not necessarily the best incentive for the young, and may be harmful, both to the few who succeed and the many who fail. The tonic effect of a sense of successful achievement may make a little intelligence go a long way. And even the dullest should not be denied an opportunity of being successful within his own limits.

The definitely defective of stable high-grade type must be taught in special schools, or in special sections of the elementary schools, and may be graded roughly according to mental age. Transitional cases—who may subsequently be either promoted to the ordinary classes or definitely sent to the special school—should be catered for in the school itself in 'ungraded' classes. A distinction would be made between these 'ungraded' classes and 'opportunity' classes for normal or slightly subnormal children who are retarded educationally for a variety of reasons other than intelligence, and who require special coaching. A considerable proportion of the subnormal, especially those who are only slightly so, can be educated in the ordinary school, either in a lower grade, or with some modification of the curriculum.

Many of the newer educational tendencies are of value both to the subnormal and the supernormal, and to some extent allow them to work side by side without detriment to either.

The Dalton Laboratory Plan, for instance, sets the pupil a monthly assignment of work. In the first instance, this may be modified in scope or content, so as to be suitable for normal, subnormal and supernormal children. In the second instance, the pupil is allowed to finish his 'job,' in his own time and in his own way. With certain necessary restrictions, the pupil may work at any part of his assignment, at any time and for any period. One classroom or 'laboratory' is devoted to each cardinal subject, is fitted with suitable reference books, models and so on, and is in charge of a specialist teacher who is ready to explain individual difficulties as they arise, and can give special help to anyone who may ask for it.

Individualization is stimulated by encouraging the pupil to do his own task in his own way, at his own time, and with due sense of responsibility: to consult reference books, maps and diagrams, and, in general, to cultivate the attitude of a researcher. Socialization is stimulated by teaching the pupils that it is not criminal to help one another in their tasks. The emphasis is perhaps more on individualization than on socialization.

Daltonism is, in practice, best alternated with periods of more passive collective class teaching, and is more suitable for children over nine. It enables dull and subnormal children to do their work in perhaps a longer time, but to do it thoroughly and without loss of confidence; whereas the same children in a lower grade—with others of equal educational attainments but of superior I.Q.—would be uneasy and unlikely to do themselves justice.

A modified Dalton plan has been tried in a special school, but was apparently most successful in those whose mental age was over seven and whose I.Q. was over 60. Seemingly, though full of possibilities for the subnormal, the Dalton plan is not of great value for the markedly defective.

For younger subnormals the various Project plans are useful. In these, a whole class or even school tackles a definite task: perhaps to wall-paper a room or stage a play. Whatever literary, historical, mathematical, geometrical or other work is required in the course of the communal task is carried out by the pupils.

The Decroly modification has been used for defective children in Belgium whence the plan originates and at the Metropolitan Asylums Board's Institution at Darenth.

For the youngest subnormals and for defectives who are barely educable the most useful methods are the Montessori, Macdowall, and similar methods derivative from Itard, Seguin and the French school of sense-training by physiological stimulation.

Another general aid to the differential education of children is the opening of junior schools, in which only children up to eleven are taught.

As regards the actual curriculum, those whose mental age will not exceed seven are unlikely ever to make use of the capacity to read. Their time is more profitably spent in learning manual work of some kind in the special *occupational and vocational centres.*

Both the home and the school can be reinforced and directed in their socializing efforts by Child Guidance Clinics and possibly by Educational Clinics.

The Child Guidance Clinic will occupy itself with the maladjustments of subnormal, abnormal and supernormal children, and the first will constitute quite a substantial percentage of the total number.

Boyd has pointed out that under British conditions, the Child Guidance Clinic requiring a staff of psychologists, psychiatrists and social workers may prove initially too expensive to be opened in sufficiently large numbers, and suggests that it be inexpensively supplemented and relieved by Educational Clinics, in which psychologists may work in close collaboration with the actual teachers.

For educable high-grade defectives, some sort of vocational education is indispensable. The theory of occupational therapy and vocational preparation was built up in institutions for the defective; again, it is only fair that the defective should benefit therefrom. Many subnormals can attend day industrial centres from which they may graduate straightaway into regular work. Others, including some who are definitely defective, may be able to contribute to their upkeep by working permanently under the supervision of such centres. Others again will only respond to occupational treatment and training under residential conditions: these will be considered later. Agricultural labour, domestic service, bootmaking and tailoring are some of the commoner possibilities.

Some of the onus of dealing with such cases must fall on the industrial section of the community. Society's occupational needs are such that it can make use of all levels of intelligence, competency and skill. If the subnormal proves inadequate in competition with normal individuals, it is none the less true that in work—often of a very monotonous type—to which he is adequate he may show more stability than the normal individual. It seems only reasonable that society should systematically direct this relative aptitude into its appropriate channels, instead of allowing it to go waste or to contribute to criminality, vagrancy, pauperism and the other varieties of social maladjustment.

The subnormal's relative aptitude is usually—but not always—in manual work of some kind; it may however—by virtue of some special ability or disability—lie in the lower levels of some clerical occupation.

The practical approach to a solution along these lines, to a fuller exploitation of the industrial potentialities of the subnormal, will lie obviously with the vocational bureaux of the future; which on the basis of educational, psychological, psychiatric, medical and other relevant data, will direct the young adult to the job which is likely to be most suitable.

Subnormals, who are not definitely certifiable, are comparatively inaccessible to social effort, especially when they have left school. The criminal law is often the only means we have of reaching them. In *probation* we have a valuable transitional method of dealing with maladjusted subnormals and abnormals, who, in a more comprehensive social system, will be more adequately classified and more specifically treated. Probation itself will probably in due course dissolve largely into psychiatric and general social work, leaving the probation officer to distribute to the proper agencies, those who have failed to get there in the first instance, and whose problems have not been completely solved by the schools and vocational centres.

Though the modern tendency is to keep as many subnormals as possible in the community, the unstable antisocial types and the low-grade custodial cases must go to institutions. Among the former, however, will be some who are inadequately socialized rather than inherently antisocial, and whom one may reasonably hope to render adequate to the community. To return too many to the community fully capable of self-support is to suggest perhaps that our criterion of defect has been too elastic in the first instance.

Segregation has therefore two functions, custodial and socializing. It is obvious that these two functions should be subserved, as far as possible, by different hospitals: for the atmosphere conducive to preparation for the community must be altogether different to that existing in institutions containing large numbers of hopeless low-grade cases.

Franz has suggested that social rehabilitation of any kind involves three kinds of preparation: a functional preparation in which physical and mental disabilities are corrected as far as is possible, an occupational preparation in which a means of livelihood is taught, and a social preparation in which the individual is trained to mix with the community without friction.

Institutions with a remedial socializing aim must keep all these considerations in mind, especially the last, which is the most important, the most difficult and the most neglected. It depends only slightly on institutional discipline and routine, which, in themselves, tend only to initiate a vicious circle of dependence on others. It depends more on the establishment of a systematic continuous progressive chain of contacts with the outside world, institution—colony—parole—and then discharge, with permanent supervision, if necessary.

The term 'colony' in relation to mental defect has been given a wider connotation of late, especially in connection with some of the experiments of the Rome State School for Defectives in New York State. It has been used to mean any group of inmates living together under supervision outside the parent institution, while remaining under its jurisdiction, and contributing to some degree to their own support, such as farm colonies for boys, 'service' and mill colonies for girls.

Such colonies will contain a certain proportion of subnormals who will never be 'world-worthy': nevertheless their increased happiness and the contributions to their own support will justify their inclusion. Moreover such colonies seem to be comparatively cheap to run.

Farm colonies are especially satisfactory for boys who have been selected as reasonably stable after previous residential training and discipline. Many of these can be hired out to neighbouring farmers, under parole conditions, and with some means of checking outside supervision. Under such conditions they seem to make steady, happy and reliable workers. Farm-work has for subnormals the double advantage, that it suits their slower tempo and that it compels them to lead a life which—from the health view-point—is almost fool-proof. In the American experiments sex misdemeanours seem to have given little trouble. Indeed there is no evidence to indicate that subnormal boys—specific sex delinquents excepted—are, as a rule, sexually aggressive.

For girls, 'service' colonies cater for those who, though they live together, need not work together: mill colonies for those who are best working as well as living together. The girls live in hostels situated in a residential area or near a mill or factory. Such colonies bridge the gap between institution and community and help to make the girls' first step in social rehabilitation a successful one.

In *'service' colonies*, much will depend on the homes to which the girls are sent daily: it is only fair to them that they should not be exposed to neurotic caprice, exploitation of any kind or seduction.

Mill colonies, in which feebleminded girls under hostel supervision do routine work in mills and factories, seem to have been especially successful under experimental conditions. Many of the girls were able to compete successfully with normal girls, and were often more reliable, more punctual workers.

In both institution and colony life, much more use might be made of systems of grading by privileges, marks and such-like, each rise in grade to bring not only greater privileges but also wider responsibilities.

Such a system would exercise a continuous pull on the 'improvables,' a continuous incentive to achieve 'world-worthiness.' Records of the promotion-history of the individual would also give some clue as to his likelihood of adjustment in the community and could be correlated with his subsequent career.

Incidentally the sexes should be mixed as far as is feasible. It seems unfair to unload a subnormal—trained in a one-sex institution or colony—into a two-sex world.

'*Parole*' involves a further step in social rehabilitation. Here supervision operates indirectly through the conditions and environment that have been chosen for the individual, and also directly through the guardians that have been chosen. A good home environment combined with a permanent steady job are—as has been previously stated—perhaps the two most important social factors in the prognosis. As the defective's own home conditions are generally bad, the choice of a suitable guardian becomes an important practical issue.

Discharge is the last step in rehabilitation. In a large number of cases, perhaps the majority, the environment must still be controlled and made easier for the subnormal. It seems likely that the community will always have to accept a certain amount of responsibility for some of its working members, and will have to exercise some sort of supervision over them. For the moment, such responsibility seems to be even greater in the case of subnormal women of child-bearing age. And working colonies or hostels seem to be the most promising method of dealing with the more troublesome cases, with segregation in reserve. Subnormal women are not inevitably promiscuous, sexually, any more than subnormal men are sexually aggressive: indeed, if suitably trained, they can be very persistently chaste.

The success with which subnormal types can be made to conform with social demands is in the last instance contingent on the ability of society to develop a social technique of handling maladjustment, and on the training of an adequate number of field workers with social and psychiatric training. The proportion of subnormals which a society is capable of using in the community might well be considered an index of the quality of that society.

VI. SUMMARY AND CONCLUSIONS.

1. Mental deficiency is a maladjustment due primarily to biological defect causing mental subnormality, due secondarily to psychological or social factors or both. Where adult intelligence does not exceed a Terman age of six or seven—as in the idiots and imbeciles—the primary biological factors in themselves constitute mental deficiency. Where the Terman age lies approximately between seven and eight or nine, it is the presence of the secondary factors that determines whether a given individual will ultimately be classifiable as legally defective or as merely subnormal. The immediate treatment of deficiency resolves itself into

the control and modification of the psychological and social factors, the ultimate solution however of the problem rests on the modification or elimination of the primary biological factors.

2. The primary biological factors determining subnormal intelligence are manifold; mental defect is not an unitary condition; it is on this account that Southard prefers to speak of the 'hypophrenoses.' Of the five groups of biological factors—hereditary, blastophoric, congenital, natal, and acquired—the second and third are especially worthy of further investigation by geneticists, obstetricians and others. On our evaluation and classification of such factors is contingent the policy we are to adopt. Hereditary factors will demand an eugenic solution: blastophoric and somatic factors an euthenic solution. At the moment it seems wiser to consider both methods of attack, with the emphasis perhaps on the latter. Incidentally an adequate case does not seem to have been made out for sterilization.

3. Because of its manifold organic causation, mental defect is most practically considered in terms of intelligence and social behaviour. The nature of intelligence—and of special abilities and disabilities—being as yet not completely understood, the relevancy of mental testing is not yet definitely established. Nevertheless for practical purposes it has some validity. Large-scale testing has shown that a maximum mental age of twelve includes too much of the population and is impracticable. Provisionally eight or nine seems a suitable delimiting mental age, above which no one should be regarded as defective; at and below which we have a reservoir of subnormality on which ferments of psychopathy and social suggestion act to produce the actual incidence of mental defect. Social behaviour in the young is conveniently considered in educational terms; in the adult in economic and industrial terms.

4. The psychological factors complicating subnormality consist, for the most part, of anomalies of temperament and character, to a lesser extent, of psychotic and psychoneurotic reactions. Psychologists and psychiatrists have yet to devise a comparable—and if possible—a quantitative method of rating temperament. At the moment, the most practical method is to attempt an evaluation of emotional traits that have been selected on a purely situational basis. Anomalies of temperament and character are then the exaggeration of individual emotional traits or of a disharmony between them, and are the result of social factors in the environment interacting on the increased suggestibility of the subnormal. Failing prevention by general social and educational measures, such anomalies will require individual corrective treatment

by parent, teacher, probation officer, or in the last instance, by the psychiatrist aided by his social workers.

5. The social factors complicating subnormality are either of omission or commission, or—as an extension of the latter—due to the social demands made of the individual. The cardinal sin of omission is failure to give the subnormal a differential training in the home, the school, and in special vocational centres: to make the most of whatever intelligence there is, and to avoid a sense of failure with its risks of consequent psychopathy. Sins of commission are those exposing the subnormal to environmental conditions that tend to exaggerate individual traits or a disharmony between them; that tend—in short—to induce some kind of psychopathy. In addition to these, sex and domicile—whether urban or rural—may modify social demands sufficiently to determine whether the subnormal will adapt himself or no.

6. Social methods of treating and controlling mental deficiency have the following aims. In the first instance, the biological determinants of subnormal intelligence must be kept in check by positive and negative, eugenic and euthenic measures. In the second instance, the subnormal must be socialized to the full extent that his intelligence allows: by adequate habit-training in the home, by a more differential training in the schools, and subsequently by a special vocational preparation. Child Guidance and Educational Clinics may here reinforce and direct the work of the parent and teacher. A third aim is to control the environment, and to avoid features which tend to induce character anomalies or precipitate antisocial reactions. A suitable niche in the community must be found for those who can be trusted in it: here the vocational bureaux will be of increasing value as time goes on. Social demands must be regulated, and some degree of permanent supervision may be necessary. Fourthly and lastly, custodial and antisocial types must be segregated. Every effort, however, must be made to socialize as many as possible of the latter by establishing a systematic, continuous, progressive chain of contacts with the outside world, institution—colony—parole—and then discharge, with permanent supervision, if necessary.

The proportion of subnormals which a society is capable of using in the community might well be considered an index of the quality of that society, and is dependent on its ability to develop a social technique for handling maladjustment.

Psychological treatment of subnormality is mainly corrective; social treatment is preventive of maladjustment; the ultimate solution rests on the social control of the primary biological factors.

7. The study of mental deficiency is one leg of the psychiatric tripod, the study of the psychoses and of the psychoneuroses constituting the other two. And the psychiatrist is hardly competent to deal with one of these aspects of maladjustment, unless he thoroughly understands the other two.

The study of mental deficiency has been too long—to mix our metaphors—the Cinderella of the psychiatric sister arts. And it is perhaps still imperfectly realized how much it is capable of contributing to our knowledge of maladjustment.

On the biological level it draws our attention to genetic values; and to the relationship between biological make-up and subsequent psychotic and psychoneurotic reactions. No theory of such reactions—psychogenic or otherwise—can fail to consider such organic conditions. One school, indeed—that of Adler—considers such conditions to be the prime determiners of psychogenic reactions.

On the psychological level, the study of intelligence problems is revealing how much maladjustment is due to discrepancy between amount and type of capacity and attempted achievement: and is revealing the rôle of general and special abilities and disabilities in such problems. An impetus is being given to the study of temperament by the need of such knowledge in the sphere of mental deficiency. Such knowledge must ultimately reveal interesting and important relationships between innate emotional traits and the types of acquired psychotic and psychoneurotic reactions that are superimposed on them.

On the social level, the task of educating defective children has elicited—and may still elicit—important educational principles which will enable us ultimately to exploit more fully the capacity of both normal and supernormal children. The theory and practice of vocational diagnosis and training—which is being built up as a direct result of the needs of defectives—must ultimately be of fundamental importance in the process of rehabilitating the maladjusted: and vocational treatment will follow psychotherapy as stages in the same process. It will also help the normal individual to a more complete adjustment, and should incidentally help in the solution of many of the maladjustments that occur in industry.

The treatment of mental defectives has also emphasized the need of a direct social technique for handling maladjustment. It has emphasized the need of social workers with psychiatric training, whose functions will be partly corrective and controlled by the psychiatrist, and partly preventive with power to act on their own initiative.

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CRITICAL NOTICE

The Future of an Illusion. By Sigmund Freud, M.D., LL.D. Translated by W. D. Robson-Scott. London, 1928. The Hogarth Press and the Institute of Psycho-Analysis. Pp. 98. Price 6*s.* net.

To Freud the universe seems unfriendly and the heart of man desperately wicked. Nature is sublime, pitiless, inexorable, and all men have destructive, anti-social and anti-cultural tendencies. The conquest of nature is the goal of culture and civilization, and in the course of the struggle culture has to ensure the regulation of human affairs and relations. Communal life imposes restraints on man's instinctive desires and activities, and security is obtained at the cost of frustration and sacrifice. But restraints and the suppression of the instincts arouse dissatisfaction among the masses, for they are not easily convinced that renunciation of instinctual desires is a necessity of civilization. Only by the influence of those whom they recognize as their leaders can they be induced to submit to the restrictions imposed upon them by culture, and since these leaders are a small minority, they must have at their disposal means of enforcing their authority. The work of civilization is impossible without coercion: but coercion leads to rebellion, and the masses develop hostility towards culture and resistance against its institutions.

Although the masses reject the claims of culture and rebel against its restrictions, they cannot defend themselves against the supremacy of nature and the fate that threatens them, unless they accept the means of salvation provided by culture; namely, belief in a divine father who will be their refuge and their strength in time of trouble, and will recompense them, in an after-life, for all that makes this life hard. This belief is the illusion whose future Freud discusses in this essay.

The term illusion is used here in a sense somewhat different from that which it has in general psychology. Freud says: "we call a belief an illusion when wish-fulfilment is a prominent factor in its motivation, while disregarding its relations to reality, just as the illusion itself does" (p. 54). At the same time he says "the illusion need not be necessarily false, that is to say, unrealizable or incompatible with reality." Although he holds that religious doctrines are all illusions, he confesses that of the reality-value of most of them we cannot judge. It does not lie within the scope of his enquiry to estimate the value of religious doctrines as truth. He is content to recognize them, psychologically considered, as illusions. Nevertheless, he makes it plain that his recognition of them, psychologically considered, as illusions has strongly influenced his attitude to the question of their objective truth.

Freud suspects, however, that other cultural beliefs besides religious doctrines may prove to be illusions when subjected to the same kind of critical examination. He boldly asks "whether there is any better foundation for our conviction that it is possible to discover something about external reality through the applying of observation and reasoning in scientific work" (p. 59). He thinks that such an examination would at least partially justify his suspicions, but he confesses that he has not the means to undertake so comprehensive a task. This is to be regretted, for a demonstration of the illusory nature of scientific knowledge, by Freud himself, would remove the impression of bias against religion which is produced by his confining his scepticism to the field of religious doctrines. In the end, however, his philosophical scepticism leaves him and he closes his essay on this positive note: "No, science is no illusion. But it would be an illusion to suppose that we could get anywhere else what it cannot give us."

One of the most noteworthy characteristics of Freud's writings is the acuteness of his criticism of his own views. In this essay his ability to see all round a question has prompted him to set up an imaginary opponent who disagrees with his arguments and criticizes them. The exposition at times takes the form of a dialogue in which Freud replies to the criticisms which he himself has put into the mouth of this opponent. The objections put forward are no mere pseudo-criticisms put up in order to show how easily they may be overthrown, but are real objections, often supported by arguments so forcible that one sometimes feels that Freud's Frankenstein has worsted his creator.

The most general statement of Freud's attitude towards religious doctrines and their future fate is contained in his comparison of religion to an obsessional neurosis. As "the human child cannot well complete its development towards culture without passing through a more or less distinct phase of neurosis," so the whole human race in its development passes through an analogous phase, and religion is "the universal obsessional neurosis of humanity." And just as the obsessional neuroses of childhood are usually overcome spontaneously as one grows up, so in mankind as a whole "the abandoning of religion must take place with the fateful inexorability of a process of growth." Freud believes that we are now in the middle of this phase of development.

The validity of this analogy is not clear to the general reader, for no account is given of the process of the recovery which occurs spontaneously in the obsessional neuroses of children. He wants to know what the factors are on which such recovery depends. Does the child need to give up his cultural or religious inhibitions, such as they are, before he gets rid of his neurosis? Or is it by accepting the universal neurosis (religion) that he gets freed from his personal neurosis? Or can it be said of the child that his spontaneous recovery from neurosis is due to his having "to replace the consequences of repression by the results of rational mental effort"? This is the course foretold for humanity if it is to continue the process of growth which will inevitably lead to the abandoning of religion, but the reader unversed in the details of psycho-analytic doctrine is unable to judge how far the analogy of the childhood neurosis and the universal neurosis holds good in respect to the process of recovery.

Although Freud views the abandonment of religion without fear and without regret, he shows considerable apprehension concerning the effect which this may have on culture. He says culture has little to fear from the educated or from the brain-workers, but he thinks it is quite otherwise with the uneducated and suppressed who have every reason to be enemies of culture. He thinks the masses obey cultural laws only because these laws are believed to have divine sanction. Their belief that God is the author of these laws is not, however, a result of personal belief in God's existence, but is rather due to the knowledge or assumption that the cultured minority hold this belief: "So long as they do not discover that people no longer believe in God, all is well" (p. 68).

When they do discover that 'people' no longer believe in God, then Freud fears that their deep-seated hostility to culture will have no check and they will break all cultural commandments and "kill without hesitation." Freud puts the 'cultured minority' in the position of the country gentry who go to church 'for the sake of example,' and there is a fine Tory flavour in his suggestion that one of the ways of dealing with the situation would be to secure "the most rigorous suppression of these dangerous masses and the most careful exclusion of all opportunities for mental awakening."

One feels that in what he says about the masses and their attitude towards culture and religion, Freud's eyes are all the time fixed on "the great cultural experiment that is at present in progress in the vast country that stretches between Europe and Asia"; for much of what he says cannot truthfully be said of 'the masses' of Western Europe. It would rather seem that his alternative solution—"a fundamental revision of the relation between culture and religion"—has long been in progress among all the world's peoples who have been brought up in an atmosphere of freedom. Knowledge of the rational motivation of cultural laws is no longer confined to the cultured few. Religious motives for civilized behaviour are already being "unobtrusively replaced by other and secular ones," not only by the cultured few who have abandoned religion, but also by many of the uncultured who have no religion; and also indeed by many, both cultured and uncultured, who have retained some sort of religious belief.

An interesting climax in Freud's train of thought is reached when he reminds himself that the rational motivation of civilized conduct is, after all, only a rationalization, and that the historical basis of cultural laws is essentially 'religious.' The murder of the primal father and the emotional reaction which followed and gave rise to the commandment "thou shalt not kill," were on Freud's own showing the original source of religious behaviour. The primal father was the prototype of God and the prohibition of murder was due to primitive man's notion of God rather than to his recognition of what was necessary for society.

Since he has shown that religious ideas have their origin in human wishes, Freud cannot believe that they correspond to any reality. He thinks it odd that all the fundamental conceptions of religion—God as creator and benevolent providence, a moral world-order, and a future life—should, if true, be just as we should wish it ourselves; and he thinks it still odder that all these riddles of the universe should have been solved by our savage ancestors.

It may be pointed out, however, that something equally odd is accepted by Freud without surprise or comment. He has shown how our basic cultural laws—the prohibition of incest, cannibalism, and murder—are historically derived from primitive religious notions, and it seems odd that laws or prohibitions based upon illusions should be so completely in accord with those that are "the final result of reflection" of the most cultured peoples. What is there in the nature of the intellect that it should so faithfully confirm practices determined by illusory beliefs? Is there, perhaps, behind the illusory beliefs, some reality which determines the form the illusion takes, and provides the rational justification of the conduct based upon it?

His recognition of the religious basis of cultural laws does not prevent Freud from desiring to exclude religious doctrines from the motivation of civilized behaviour. The admission of illusions into the motivation of conduct is incompatible with that 'education to reality' which he regards as the most urgent necessity for human progress. His ideal man is not one who, when met by "the great necessities of fate against which there is no remedy," whimpers and prays to be delivered from destruction, but one who has learnt to "endure with resignation" and to "confess his utter helplessness and his insignificant part in the working of the universe."

That Freud should be opposed to the religious upbringing of the young is not surprising. No one has such opportunities as the analyst for realizing the disastrous effects of the inhibitions imposed by devout parents on their helpless offspring; and few analysts can escape the conviction that the fear of the Lord is very often the beginning of neurosis rather than of wisdom. The inhibition of thought resulting from the acceptance of religious dogma, and the submission to cultural laws and conventions based upon religious beliefs, are destructive of full mental development, and Freud goes so far as to suggest that it may be largely due to religious upbringing that men are so slightly amenable to reason and so completely ruled by their instinctual wishes. He is therefore desirous that the experiment of non-religious education should be tried, but he is not convinced that the experiment would be a success; for he thinks it possible that "it will turn out that human nature remains the same even if education is not abused by being subjected to religion" (p. 84).

On this matter it does not appear that he has effectually answered the criticism of his imaginary opponent, who says: "If you wish to expel religion from our European civilization you can only do it through another system of doctrines, and from the outset this would take over all the psychological characteristics of religion, the same sanctity, rigidity and intolerance, the same prohibition of thought in self-defence....The doctrines made use of in their education will always confine the thought of their riper years, exactly as you reproach religion with doing to-day" (p. 89).

It is important to bear in mind what Freud means by religion when he calls all religious ideas illusions. Many people would not accept his definition of religion. For him "religion consists of certain dogmas, assertions about facts and conditions of external (or internal) reality, which tell one something that one has not oneself discovered and which claim that one should give them credence" (p. 43). He admits that there are many such dogmas about the most diverse things, as, for example, the things we have learnt in the study of Geography. We are told that "Konstanz is on the Bodensee" and we believe it. According to Freud the difference between belief in this statement and belief in the statements of religious teaching is that if we should doubt that Konstanz is on the Bodensee we can, in the words of the students' song, "go and see" for ourselves. The geographical dogma can be verified by personal experience, whereas the religious dogma cannot be thus verified.

Many religious people, however, maintain that verification of their belief is to be obtained in a similar way, namely, by "an inner experience which bears witness to that truth." But if acceptance of the truth of religious doctrines is dependent on such an experience, Freud asks, "What is one to make of the many people who do not have that rare experience?" The defender of religion might say that they are in the same position as the people who have not been able to go to Konstanz in order to verify its geographical situation. If it be said that it is open to anyone to go to Konstanz, while not everyone can attain to the religious experience, religious men may tell us that this experience can be attained by all who are willing and able to fulfil certain conditions. If this be true, it may be said that one who has not had the necessary inner experience has no more right to deny the truth of religious belief than has one who has not been to Konstanz the right to deny that it stands on the Bodensee.

It has been pointed out that Freud disclaims any intention of pronouncing on the 'reality-value' of religious doctrines. He is in the main content to examine them in the light of psychology and to show that in view of their mode of origin and growth, in the individual and in the race, they are illusions in the sense he has defined. But although he refuses to dogmatize on these fundamental matters and does not try to compel others to accept his own beliefs, it is made quite clear in what direction he has been influenced by his psychological discoveries. The illusory nature of religious ideas is as far as science will take us, and, for him, science is our only guide to knowledge of external reality. He admits that to many questions science can as yet give no answer, and he rightly insists that "ignorance is ignorance; no right to believe anything is derived from it." He will have no over-beliefs—at least of a positive kind.

But if science is to be taken as our only guide to truth, and if no right to believe anything is derived from ignorance, we should permit ourselves no over-beliefs of either a positive or a negative kind. If it is permissible to have over-beliefs of a negative kind, such as denial of the existence of God implies, it should be equally permissible to have over-beliefs of a positive kind, such as belief in a God who is "both creator of the world and a benevolent providence." For these are questions to which science gives no answer, and those who agree with Freud that "it would be an illusion to suppose that we could get anywhere else what it cannot give us," should neither believe nor disbelieve.

T. W. MITCHELL.

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